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A CONSIDERATION OF THE RELATIVE FREQUENCY OF THE VARIOUS FORMS OF COMA

WITH SPECIAL REFERENCE TO UREMIA *

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Not only has the differential diagnosis of the various types of coma occupied a conspicuous place in routine medical instruction for a long period, but this topic year after year is the subject of contributions to medical literature so numerous that many pages would be required to enumerate the references to articles quite generally accessible.

One phase of these many considerations has been quite generally ignored, the relative frequency with which the different causes of coma bring it about. With this in mind, the following study of the clinical and anatomic conditions attending 200 deaths in coma or semi-consciousness has been made.[1] It is believed that various factors, such as the degree of medical skill, methods of hospital practice, etc., pertaining to the clinical examinations, as well as to the diagnoses, may not be very unlike those existing in hospitals of other large communities like Chicago receiving a great deal of so-called emergency work.

It is obvious that any estimate of the value of present-day methods of determining the causes of coma should in all fairness take into consideration the periods under clinical observation, and for this reason the results of our study are presented as charts. The 200 deaths all occurred in a period of about three and one-half years. The deaths in coma developing in the hospital or those in which the cause was well understood, such as illuminating gas, phenol (carbolic acid) or other poisons are not included.

We have accepted as the clinician's conclusion the diagnosis entered on the first page of the clinical record in the place provided for such entry, notwithstanding that this entry has in some instances been made after death and possibly with a knowledge of the conditions found at the post-mortem examination. This element of error we do not believe is a large one, and whatever its size there still remains enough of interest to illustrate the results attained in the practical recognition clinically of the causes of coma.

Chart 1 deals with all 200 deaths, with the exception of 17 which took place between the fifth and the seventeenth days, inclusive. The heavier upper line indicates the times when deaths occurred as well as their number, the lower lighter line the number correctly diagnosed. From this it can be seen that of 200 deaths in coma, 47 occurred within four hours of admission, and of these, 20, or 42.5 per cent. were correctly diagnosed. Both curves take an abrupt descent to the 8-hour period, and of the 18 deaths falling in the period of four to eight hours, 10, or 55.5 per cent. were correctly diagnosed. In the third period (eight to twelve hours), 19 died, 10, or 52.6 per cent. with correct diagnoses.

It follows, then, that 116 deaths occurred within twenty-four hours of admission, and 59, or 50.7 per cent., with correct diagnoses. Thirty-five died on the second day, and 13, or 37 per cent., of these were correctly diagnosed. Of 14 dying on the third day, 6, or 42.8 per cent., were correctly diagnosed; on the fourth day, 4 (44.4 per cent.) of 9, and of the remaining 26 deaths occurring from the fifth to the seventeenth day, inclusive, the diseased conditions of 18, or 70 per cent., were correctly diagnosed.

From this chart it seems reasonable to conclude that of the patients entering the Cook County Hospital in coma and dying without regaining consciousness, over half of them die within twenty-four hours of admission, that few live longer than five days, and of those dying within four days, at least the accuracy of the clinical diagnosis is little affected by the element of time.

Some of the reasons for these conditions, as well as another already mentioned, the higher percentage of correct diagnoses of diseases causing death during the first twenty-four hours than for those which terminate fatally in the following three days, will be evident from study of this and the other charts.

The gradual increase in the number of correct diagnoses with lengthening of the period of observation is obviously what might be expected. In two recent attempts to emphasize the large number of incorrect clinical diagnoses, the absence of any reference to the length of time clinicians had to study the diseases they failed to recognize, we believe, has deprived these contributions of some of the attention they justly merit.[2]

* From the Pathological Department of the Cook County Hospital.

* Report made to the attending staff of the Cook County Hospital, Chicago, at its regular monthly meeting, March 11, 1915.

1. For many years at the Cook County Hospital, deaths in coma or conditions closely approaching coma have been the subject of medico-legal inquiry, and one of us (E. R. L.) as coroner's physician made the post-mortem examinations discussed here.

2. Cabot, R. C.: Diagnostic Pitfalls Identified During a Study of Three Thousand Autopsies, THE JOURNAL A. M. A., Dec. 28, 1912, p. 2295. Summary of Findings, Conclusions and Recommendations with Regard to Autopsy Findings, Section III of the Report of the Committee on Inquiry into the Department of Health, Charities and Bellevue and Allied Hospitals in the City of New York, 1913.

Without assuming that other equally advantageous methods might not be employed, we have been impressed with the value, as a measure of hospital efficiency or of standardization, of the rate of ascent of curves for correct diagnoses when charted with ordinates for time under observation and abscissae, the percentage of such correct diagnoses.

Chart 2 deals with the conditions which, from the clinical examinations, were supposed to be responsible for the deaths of 85 persons who all in reality died from skull fracture. It is at once noticeable that the lower light line of correct clinical diagnoses is much closer to the heavy black line of anatomic diagnoses (skull fracture), meaning, of course, that the percentage of correct clinical diagnoses is relatively much higher for skull fracture than it is for the entire group of 200 deaths in coma from various causes.

During the first twenty-four hours, 45 died and 35, or 77.7 per cent., were correctly diagnosed. Thirteen died on the second day with 8, or 61.5 per cent., correct diagnoses. Five, or 71.4 per cent. of 7 deaths on the third day, were correctly diagnosed. The remaining 20 died on the fourth to the twelfth day inclusive, and of these, 13, or 65 per cent., were correctly diagnosed.

Comparing this chart with Chart 1, it seems reasonable to conclude that the clinical diagnosis of skull fracture is made with relatively greater accuracy than are the diagnoses of the various other causes of coma, and that the greatest accuracy of diagnosis is obtained in those instances of skull fracture in which the patients died within twenty-four hours of admission. As a possible explanation, it may be suggested that marks of injury very frequently give a definite clue to skull fracture; and assuming that the extent of injury to the skull, brain and external soft parts is measured directly by the severity of the external violence, we might well expect the greatest accuracy of diagnosis of skull fracture to obtain with severe injury and early death. Confirmatory of this, we find that in every history of the 61 correctly diagnosed instances of skull fracture, some injury to the head is mentioned: in 11 instances, hemorrhages from the ear or nostrils or from both places, hemorrhages into the orbital tissues from deep injuries ("black eyes") in 5, contusions of the scalp or other scalp wounds in 33, and in 12, injuries revealed by operations.

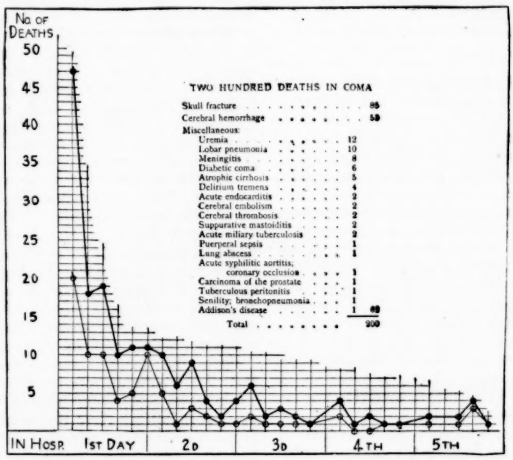

Chart 1.—Correct and incorrect diagnoses in 200 deaths from coma. Heavy line, deaths; light line, number correctly diagnosed. In this chart, seventeen deaths in coma are not plotted. They occurred as follows: One on the fifth day, 4 on the sixth day, 5 on the seventh day, 2 on the eighth day, 2 on the ninth day, 1 on the tenth day, 1 on the twelfth day, 1 on the seventeenth day. The clinical diagnoses were correct in twelve of these.

In Chart 3 we have considered 53 deaths from cerebral hemorrhage, 27, or 51 per cent., having been diagnosed correctly. Five, or 41.6 per cent., of the 12 dying during the first four hours under observation, received proper diagnoses. Of the 6 dying in the period of four to eight hours after admission, 3, or 50 per cent., were correctly diagnosed, while during the entire first day 37 died, 18, or 48.6 per cent., with correct diagnoses. Of the 9 dying on the second day, 6, or 66.6 per cent., received correct diagnoses, whereas of the 5 dying on the third day, only 1, or 20 per cent., received a correct clinical diagnosis. Six, or 75 per cent., of the 8 dying from the fourth to the tenth day were correctly diagnosed.

One of the noteworthy features of Chart 3 is the frequency of the diagnosis of uremic coma. Of the 53 instances of cerebral hemorrhage, 16, or 30 per cent., were called uremia; or, to state it in another way, of the 26 mistaken diagnoses of cerebral hemorrhage, uremia was the clinician's conclusion in 61.5 per cent. of these errors. This frequent selection of uremia from all the causes of coma as a diagnosis for spontaneous cerebral hemorrhage has led us to the review of conditions indicated in Chart 4, in which the 46 deaths in coma diagnosed uremia are dealt with. In this chart, the upper heavy line represents the number of deaths and the time when they occurred, the lower lighter line the number correctly diagnosed. One death from cerebral hemorrhage occurring on the seventeenth day is not charted. One of the interesting features of these deaths supposedly from uremia is the correctness of 5 diagnoses of this form of death on patients under observation four hours or less, 62.5 per cent. of all the correct clinical diagnoses of uremic coma.

The following brief summaries pertaining to deaths from uremia correctly diagnosed and to conditions incorrectly regarded as uremia are presented because uremia is a clinical conception for a variety of anatomic alterations and so different in this regard from some of the other causes of coma, such as fractured skull or apoplexy; these summaries also illustrate how the conclusions used in the charts have been arrived at. Only the pertinent changes found at the post-mortem examination are mentioned.

CORRECTLY DIAGNOSED UREMIA

Case 1.—A. N., a man aged 56, entered the hospital in a dying condition with a history of frequent urination and

alcoholism. Examination of a catheterized specimen of urine revealed a large amount of albumin and many pus cells. Death occurred after fifty minutes. The clinical diagnosis was uremia and alcoholism.

Anatomic Diagnosis.—Old pyelonephritis and pyelitis; right nephrolithiasis; extensive replacement of renal parenchyma by perirenal adipose tissue; marked edema of the brain and lungs.

CASE 2.—E. N., a young man of 19, entered the hospital in deep coma. There was a general subcutaneous anasarca,

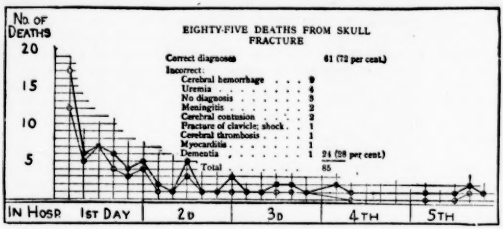

Chart 2.—Conditions which clinically were supposed to be responsible for the deaths of eighty-five persons who died from skull fracture. Heavy line, anatomic diagnoses; light line, correct clinical diagnoses. In this chart, twelve deaths from skull fracture are not plotted. They occurred as follows: 1 on the fifth day, 3 on the sixth day, 5 on the seventh day, 2 on the ninth day, 1 on the twelfth day. The clinical diagnoses were all correct except three (two cerebral hemorrhage, one dementia).

a urinous breath, high-tension pulse, muscular twitchings, and the urine contained albumin in considerable amount. He died in seventy minutes. The clinical diagnosis was uremia.

Anatomic Diagnosis.—Chronic diffuse nephritis, "mottled kidneys"; marked hypertrophy of the left ventricle; anasarca.

CASE 3.—M. K., a woman, aged 29, entered the hospital in an unconscious condition with general convulsions and a history of having been ill one day. No noteworthy clinical observations were recorded aside from the diagnosis of uremia. Death occurred in three hours.

Anatomic Diagnosis.—Chronic diffuse nephritis; "small red kidneys"; edema of the brain; acute edema of the lining of the stomach, small bowel and rectum; ulcerative tuberculosis of the left lung with miliary tuberculosis of the cervical lymph nodes.

CASE 4.—P. S., a housewife, aged 44, entered the hospital with a diagnosis of uremia. From the husband it was learned that she had complained of pain in the abdomen, back and shoulders and a headache for two weeks. She was confined to her bed with chilliness and some fever and frequent attacks of vomiting. While formerly she had been obliged to urinate four or five times a night, she had not urinated for a week previous to admission, and four days previous she had passed into coma. The husband stated that a stone had been removed from the right kidney eight years before. There was some enlargement of the heart to the left. No urine was obtainable by catheterization. The blood pressure was 148. Death occurred in two hours with a diagnosis of uremia.

Anatomic Diagnosis.—Absent right kidney; old nephrectomy scar; compensatory hypertrophy of the left kidney; nephrolithiasis; purulent cystitis; ascending infection of the urinary tract; left hydronephrosis; edema of the brain and lungs.

CASE 5.—J. S., an emaciated man apparently past middle life, and in coma, had continuous clonic and tonic generalized convulsions. His blood pressure was 155 and his urine contained abundant albumin, many pus cells and a few casts. Aside from the enlargement of the heart to the left there were no other noteworthy clinical observations. The diagnosis was uremia, and death occurred twenty-nine hours after admission.

Anatomic Diagnosis.—Chronic diffuse nephritis with marked so-called secondary contraction of the kidneys; marked edema of the brain; generalized anemia; edema of the right leg and ankle; emaciation; thrombo-ulcerative endocarditis; slight mitral stenosis; hypertrophy of the heart; fibrous myocarditis.

CASE 6.—M. B., a bricklayer of middle age, entered in coma. He was cyanotic and there was some edema of the face and a marked hypostatic edema of the lungs. The clinical diagnosis was uremia. Death occurred one hour after entrance.

Anatomic Diagnosis.—Chronic parenchymatous nephritis, large white kidneys; hypertrophy of the left ventricle; edema of the brain and lungs; anasarca.

CASE 7.—W. L., a teamster, aged 68, entered the hospital in a semicomatose condition with indefinite complaint of pain and tenderness in the abdomen. Attempts at catheterization were unsuccessful and accompanied by bleeding from the urethra. He died in thirty-six hours. The diagnosis was uremia.

Anatomic Diagnosis.—Stricture of the urethra; false passages of the urethra; ascending urethro-cysto-ureto-pyelo-nephritis; chronic interstitial nephritis; large retention cyst of the lower pole of the right kidney; marked edema of the lungs and brain.

CASE 8.—S. B., a housewife, aged 54, entered the hospital apparently in alcoholic coma. No evidence of uremia presented itself aside from the presence of a large amount of albumin and pus cells in the urine. Death occurred in four hours. The diagnosis was alcoholism and uremia.

Anatomic Diagnosis.—Stones and suppurative pyelitis of the left kidney; acute fatty changes in the right kidney; indurative paranephritis and para-ureteritis; edema of the lungs; moderate edema of the brain.

INCORRECTLY DIAGNOSED AS UREMIA

CASE 9.—M. L., a laborer, aged 60, entered the hospital with the diagnosis of uremia. A suggestion of right facial palsy was noticed. The left pupil was dilated, irregular and larger than the right. Neither pupil reacted to light. There was a bilateral Babinski reflex and increased patellar reflexes, especially on the left side. The urine contained some albumin and a few hyaline and granular casts. The

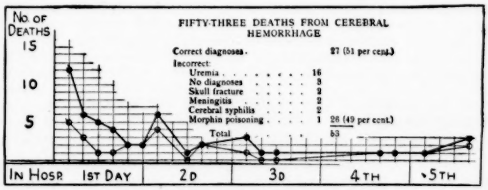

Chart 3.—Correct and incorrect diagnoses in fifty-three deaths from cerebral hemorrhage. Heavy line, anatomic diagnoses; light line, correct clinical diagnoses. In this chart, two deaths from cerebral hemorrhage are not plotted. They occurred as follows: 1 on the sixth day, 1 on the tenth day. A clinical diagnosis of tuberculous meningitis was made in the first; in the second, the clinical diagnosis was correct.

spinal fluid was under increased pressure but otherwise apparently normal. There was a polymorphonuclear leukocytosis of 11,000, and the temperature was as high as 101.4 F. Death occurred in twenty-six hours with a diagnosis of uremia and chronic nephritis.

Anatomic Diagnosis.—Marked edema of the brain; marked emaciation; cloudy swelling and fatty changes of the liver and kidneys; catarrhal prostatitis and (left) spermatocystitis; nodular hyperplasia of the prostate gland; gummatous scars in the leptomeninges.

No hemorrhages or other gross lesions were found when the hardened brain was sectioned, and the only gross change in the kidneys was "slight fetal lobation markings."

CASE 10.—H. H., a middle-aged man, entered the hospital in coma and convulsions. After entering the ward the convulsions ceased, and he presented no noteworthy physical signs which would lead one to a diagnosis. His blood pressure was 220, the urine contained abundant albumin and many hyaline and granular casts. Without regaining consciousness he died in seventy-two hours with a diagnosis of chronic interstitial nephritis, uremia, mitral insufficiency and myocarditis.

Anatomic Diagnosis.—Gummas of the liver; syphilitic aortitis; beginning aneurysm of the arch and thoracic aorta; marked edema of the brain; turbid cerebrospinal fluid; sclerosis of the coronary arteries; fibrous myocarditis; left ventricular hypertrophy; marked fatty liver; slight edema and minute gummatous scars in the leptomeninges; bronchopneumonia of the dependent portions of both lungs.

CASE 11.—J. N., a laborer, aged 45, entered the hospital with a diagnosis of nephritis, myocarditis and alcoholism. From an attendant it was learned that he had been ill for nearly ten days and had become unconscious two hours previous to entrance. The pupils were inactive to light. There was marked anasarca of the lower extremities as high as the knees. The urine contained albumin, many epithelial cells, erythrocytes and leukocytes and epithelial casts. There was a polymorphonuclear leukocytosis of 24,600. The blood pressure was 218. No spinal puncture was done. The temperature rose to a height of 104 F. rectally, and death occurred in twenty-eight hours. The clinical diagnosis was chronic interstitial nephritis with exacerbation and uremia, edema of the lungs, tertiary syphilis and delirium tremens.

Anatomic Diagnosis.—Fibrinopurulent leptomeningitis, acute interstitial and chronic diffuse nephritis with slight so-called secondary contraction; hyperemia of the renal pelves; hyperplasia of the spleen; anasarca; cloudy swelling of the myocardium; slight hydropericardium; marked edema of the lungs; slight bronchopneumonia of the posterior portions of the lower lobes of both lungs.

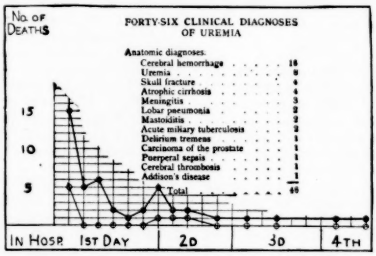

Chart 4.—Correct and incorrect diagnoses in forty-six deaths from uremia. Heavy black line, deaths; light black line, correct diagnoses. In this chart, one death in coma is not plotted. It occurred on the seventeenth day.

In this instance it may be that uremia in a measure contributed to death. That the coma was due to the meningitis is also equally admissible.

CASE 12.—G. N., an old man, was admitted to the hospital with the diagnosis of uremia and a history that he had been ill for five weeks. He was obese and there was general anasarca. The pupils were contracted and inactive to light, and there was a slight general icterus; death occurred in twenty-two hours. The diagnosis was organic heart disease and uremia.

Anatomic Diagnosis.—Marked atrophic cirrhosis of the liver; chronic parenchymatous nephritis; marked anasarca; marked edema of the brain; moderate generalized icterus; hyperplasia of the spleen; marked syphilitic aortitis; atrophic catarrhal gastritis.

In some degree the changes in the kidneys commonly referred to as parenchymatous nephritis are present with cirrhosis of the liver; and such alterations, tense parenchyma, slightly icteric and a little mottled wide cortex were the only gross changes in this instance and in the two following; nor were there noteworthy gross changes in the brain in any of these individuals with cirrhosis of the liver.

CASE 13.—Unknown old man entered the hospital as having uremia and jaundice. His legs were very edematous, the liver was enlarged and hard and there was a marked icterus. Death occurred in fifty-five minutes. The diagnosis was "atrophic cirrhosis? uremia?"

Anatomic Diagnosis.—Cirrhosis of the liver; icterus; hydroperitoneum and hydropericardium; submucous hemorrhages of the gastro-intestinal tract; chronic catarrhal gastritis.

CASE 14.—D. H., a clerk, aged 36, entered the hospital in a semicomatose condition with a diagnosis of cirrhosis of the liver. On entering the ward, supra-orbital pressure aroused him so he told his name. The liver was enlarged and there was some edema about the ankles. He died within two hours. Death was thought to be due to uremia complicated by cirrhosis of the liver.

Anatomic Diagnosis.—Atrophic cirrhosis of the liver with fatty infiltration; passive hyperemia of the mucous membrane of the stomach and bowel; chronic hyperplasia of the spleen; anasarca.

CASE 15.—K. P., a housewife, aged 26, was brought to the hospital in a dying condition. She suffered a persistent hiccup and was markedly jaundiced. The abdomen bulged, especially in the upper right quadrant. The liver was enlarged and palpable, and the splenic dulness extended to the border of the left costal arch. There were numerous purplish spots on the extremities. There was no edema. The patient died in seven hours. The diagnosis was uremia.

Anatomic Diagnosis. — Puerperal uterus and mammae; gangrenous endometritis; recently dilated cervix uteri; icterus; corpus luteum of pregnancy in the left ovary; large fatty liver.

CASE 16.—R. C., aged 80, and greatly emaciated, was brought to the hospital in coma. He was admitted on a diagnosis of uremic coma. The pupils were unequal and inactive to light. There was no edema. A suprapubic mass was palpated, and the prostate gland was noticed to be greatly enlarged and nodular. The temperature was 100 F. rectally on admission. Death came in fifty-five minutes and was ascribed to uremia.

Anatomic Diagnosis.—Carcinoma of the prostate; blood in the urinary bladder; anemia; extensive secondary metastases in the periaortic lymph nodes; emaciation; anasarca of the ankles.

With carcinoma of the prostate, as with enlargements of the prostate from other causes, an ascending infection of the urinary tract is not infrequent. Many authorities attribute death under such conditions to uremia.[3] With this prostate carcinoma there was no ascending infection.

It has long been recognized by persons with extensive experience in the making of post-mortem examinations that the diagnosis of uremia is frequently made by clinicians and rarely verified by the necropsy. Cabot, in the article already referred to, has commented especially on this defect in clinical diagnosis. In the report regarding conditions in the New York hospitals,[2] the following occurs:

3. Miller, Friedrich: Ueber Morbus Brightii, Verhandl. d. Deutsch. path. Gesellsch., 1906, ix, 64.

The large percentage of incorrect clinical or ante-mortem diagnoses in Bellevue is partly due to the lack of medical knowledge among our better class of practitioners, and partly to hasty and insufficient examinations. Too much reliance on inexperienced house physicians and interns also accounts for a portion of these errors.

As stated in the beginning, this is an effort to throw some light on the relative frequency of the various forms of coma. It is imperfect, as previously noted, in not including some of the comas which offered no problem to the clinicians, the explanation being well-verified accounts of the taking of morphin, of exposure to illuminating gas, etc. It is also imperfect in that during the period during which these 200 deaths occurred, still others died in coma whose bodies were not examined, the period of clinical observation being so long and the understanding of the disease so adequate that their deaths were not a subject of medicolegal inquiry, or being made the subject of such inquiry, post-mortem examinations were not indicated without request of relatives; in still another class of deaths, not medicolegal, the cause of coma long observed and well explained clinically was not verified because of failure to secure consent for a necropsy. These considerations should be kept in mind in any attempt to utilize the information in this review.

Regarding the diagnosis of uremia, it will be noted from the protocols that it was correct in a number of instances when death occurred in fifty minutes, seventy minutes, one hour or other similarly brief periods after entering the hospital, times altogether too short to make comprehensive examinations. These must be reckoned with as in the nature of "chance shots." It may be argued that diagnoses made under such conditions deserve no serious consideration; but, on the other hand, it has seemed to us that the tendency to deal with the diagnosis of uremia in this haphazard manner denotes a serious defect in the teaching of medicine, an ignorance of the comparative infrequency of uremic coma; finally, it should be stated that accurate figures for the relative frequency of coma of various sorts would constitute an equipment for the differential diagnosis of coma comparable in its value with the mortality statistics so useful to surgeons in making statements regarding the prognosis for operations they undertake or advise.

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THE THERAPEUTIC USE OF COLD

WITH ESPECIAL REFERENCE TO THE CLIMATIC TREATMENT OF TUBERCULOSIS

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The production of anesthesia by freezing, the relief of pain by heat or cold, the reduction of pyrexia by cold baths, evaporation of water or alcohol, etc., are all familiar practices; so also are the cold morning sponge, spray, shower or tub given for the general tonic effect. Since little attention, however, has in the past been paid to hydrotherapy in our medical schools, such measures are not always accurately prescribed nor given the serious attention which they deserve.

THE PHYSIOLOGIC EFFECTS OF COLD WATER

As the effect of cold has been most carefully studied by the hydrotherapeutist, and as water offers the most convenient medium for laboratory experimentation, let us first consider the effect of cold water. Without entering into physiologic detail we may understand by the word "cold," those temperatures which lower the temperature of the human body. (All those temperatures below a neutral zone which has no effect on body heat.) In his work on hydrotherapy Bottey[1] gives the lower limit of this neutral zone as 91 degrees F., subject, of course, to some variations with individuals and mode of application.

Extremely cold water (32 to 52 F.) when applied to the skin is at first more or less painful, then with the anemia which results with continued application there occurs a degree of anesthesia. The same is true with slightly higher temperatures—the sensation of a douche at 60 F. resembling the anesthetic effect of menthol.

Cold water applications to the body as a whole for therapeutic purposes are given in practice between 45 and 90 F. and the physiologic effect depends on the following principles: 1. Primary refrigeration of the skin and superficial tissues, a physiologic phenomenon. 2. Refrigeration due to nervous reflex action. 3. Elevation of the central temperature resulting from the flow of blood from the skin to the central organs. 4. Elevation of central peripheral temperatures of nervous origin.

These are, in brief, the main physiologic features resulting from an application of cold. The best results are obtained when the cold is applied suddenly; that is, the transition from warm water which may precede the cold, as in the Scotch douche, should be immediate and not gradual. So it is after exercise or after the hot air bath used as a preparation for a cold application; the body should not be first allowed to cool, but the cold should be applied at once.

The aim of all hydrotherapeutic use of cold is what is known as the "reaction," and includes circulatory, thermic and reflex organic phenomena—a true tonic effect on the nervous system, the heart and the lungs. Quoting Bottey,[1]

> A series of reflex effects upon the circulation both local and general, contraction of striated and unstriated muscle fiber, stimulation of organic and interstitial combustion, metabolism, secretion and excretion . . . a great physiological synthesis which results finally in increase of the general vitality, greater activity of the functions of digestion and assimilation, increase of muscular force and aptitude for work, a sensation of wellbeing, of physical, mental and moral balance, a remarkable ensemble, the result of hydrotherapy.

THERAPEUTIC EFFECTS OF COLD WATER

While the nervous system regulates all the organic processes of the organism and is in itself dependent on the other cells of the body for existence, they are not able to function without it. In treating a diseased body we cannot afford to have in mind any group of cells or any organ to the exclusion of the intricate system of cells which control their activity, their food supply, their disposal of refuse, etc. Thus the treatment of disease includes the treatment of the nervous system of the patient, and what medicine, therapeutic method or device can compare with cold when it is necessary to whip up a flagging nervous system?

"Better than any other therapeutic method" says Scheuer,[2] "better than any agent of materia medica does the stimu-

1. Bottey, F.: D'Hydrothérapie Médicale, Paris, E. Plon, Nourrit & Co., p. 68.
2. Scheuer: (de Spa), Essai sur l'action physiologique et therapeutic de l'hydrothérapie, etc., Paris, A. Delahaye & E. Lecrosnier, 1885.

lating action of cold upon the cutaneous envelope include with a single stroke the whole nervous system, proceed, so to speak, to the simultaneous mobilization of all the elements of the cerebrospinal axis. Our best, our most faithful medicaments, opium, digitalis, belladonna, ergotine, etc., are endowed only with elective properties on this or that section of the neuron; the anesthetics themselves control the whole only after having divided it into segments to influence part by part. The general stimulating applications of hydrotherapy alone reach and subjugate it at once in all its parts—the whole nervous system from its finest eccentric ramifications to each of its central constituents is stirred up, excited, animated."

All this will, I think, be conceded when the agent is cold water applied under prescribed conditions and by skilled operators to subjects who have the power to react. Also, it will be granted that the methods of cold water treatment are applicable to both acute and chronic disease.

PHYSIOLOGIC EFFECTS OF COLD AIR

As we bathe constantly in air modified only by our clothing, the effects of cold air are not as a rule considered by themselves, but are treated by the climatologist as one of the factors in his problem. Because the subject of climatology is a complex one, there is not complete uniformity in the statements of various authors as to the exact physical and physiologic phenomena taking place.

Particularly are the results modified by psychic influence, and by the effect of wind and humidity on sensible temperatures as contrasted with physical temperatures. The effects also vary with races and individuals, and even in these the variation is not constant, because under the influence of fatigue, hunger, depressing emotions, toxic states, and all similar causes which interfere with the power of the individual to respond to the stimulating effects of cold, the physiologic reaction does not occur, or, if present, is but slight. This reaction is essentially the same as that referred to when speaking of hydrotherapy, and in general follows the same laws. However, heat abstraction by moist air is often greater than the needs of the organism, or exceeds the power of the heat-producing mechanism to meet its demands when in the form of moist, cold air indefinitely prolonged.

Exposure of the body to dry, cold air following a period of exposure to relative warmth has an effect similar to the hydrotherapeutic application of cold, that is, there is an increased loss of bodily heat followed by a demand for more. This demand is met by increased oxidation of tissue, metabolic processes become more active and there is improvement in nutrition.

THERAPEUTIC EFFECTS OF COLD AIR

While cold air is somewhat similar in its effects to cold water, we are less accustomed to consider it as having any specific therapeutic virtues. However, the "cold air bath" has been made use of in European health resorts.

We have inherited such strong prejudices against cold air, "night air," draughts, and "taking cold," that even in the case of tuberculosis, in which it is one of the chief therapeutic aids, a dozen or more years of fresh air propaganda has made but little impression on those who have not learned of its benefits by personal experience. Many probably would be unwilling to concede that much of the reputation for the virtue of fresh air belongs to cold air.

In tuberculosis and other similar infections in which it is held that recovery depends on the elaboration of products which are the result of reactions of living cells, cold water offers an ideal means for stimulating metabolism and inducing healthful reactions, or, in other words, increasing "vital resistance." Frequently, however, none the less ideal is the cold air of the mountains bathing the body nightly after the sufficiently relaxing heat of the day. The alternation of night and day, winter and summer being, perhaps, the earliest form of "Scotch douche."

Thus it would seem that when we desire to promote nutrition by climatic means we should seek a climate subject to variation in temperature, but without excessive moisture.

Bonney[3] of Denver, who emphasizes the importance of variability and dryness, sums up in these words: "In general, the influence of climate upon nutrition is largely contingent upon the degree of its heat abstracting capabilities, which feature is defined by Huggard, in his admirable treatise upon the physiology of climate, to be the one fundamental principle of climatotherapy."

Further quotations might be offered to show that among physicians who have given the matter their attention, there is a general unanimity of opinion as to the beneficial effects of cold on an individual who is able to react.

INDICATIONS FOR THE USE OF COLD

Hippocrates[4] says that "Of natures (temperaments) some are well or ill adapted for summer and some for winter." Though I am satisfied that he would not agree at all with my main argument, I am tempted to use the quotation to call attention to the fact that in attempting to obtain the beneficial effects of cold a physician must consider the personal equation of his patient as well as his disease.

If there is, then, this temperamental difference, how are we to determine when to use cold as a therapeutic measure?

My opinion is that there are very few exceptions to the rule that all cases in which there seems to be an indication for the use of cold can be safely treated by some hydriatic procedure. And that cases can often be educated by such means from a condition in which the reaction is poor to one in which there is a good reaction. This opinion is based in part on the experience gained in years of almost daily use of hydrotherapeutic means, with a total of several hundred cases, including both acute and chronic diseases.

The procedures referred to are described in standard works and are too numerous even for a complete list to be given here. The more important ones are "the cold hand rub," "mitrub," "the sponge," "the wet sheet," "the pack," "the spray douche." In pulmonary tuberculosis these are suitable for first stage cases, the douche giving way to the milder measures in case of persistent hemoptysis or fever.

In the second stage the patient may take the douche only after having been gradually educated up to it, beginning with the "hand rub" at 77 F. The relative contra-indications are the same as in the first stage.

In the third stage sponging twice daily is usually the only method to be used. Starting with a temperature of 80 degrees, this is lowered a little on successive days

3. Bonney, S. G.: Pulmonary Tuberculosis and Its Complications, Philadelphia, W. B. Saunders Company, p. 814.
4. Hippocrates: Aph., iii, 2.

until a temperature of 63 F. is reached. Careful friction follows each sponge. Exceptional third stage cases may do well under the douche.

It is not my purpose to discuss in detail the technic of hydrotherapy, but merely to call attention to the therapeutic indications for both cold water and cold air in tuberculosis.

The treatment with climatic cold is not so generally applicable. Certain cases do not do well in cold climates. Some of these might do well if educated to a proper degree of reaction by suitable hydriatic procedures.

As has been pointed out by Woodruff,[5] Huggard,[6] and others, racial characteristics determine to a large degree the ability of the individual to adapt himself to a new climate, whether hotter or colder than the one from which his ancestry came.

It has been frequently observed that, as Huggard says,

> A man becomes acclimated readily only in countries having very nearly the same mean temperature as the country to which his race belongs. Individuals may live in seeming health in climates much hotter or colder than their own, but their posterity does not fare equally well; their descendants melt away, and hardly a survivor remains to the third or fourth generation. The attempt to colonize directly a land having a mean temperature widely different from that of the native land of the colonists has always ended in failure.

Temperature has been a very important, if not the chief obstacle to colonization of the tropics by the northern races. Tropical diseases, added to those already inherent, doubtless have done their part, and Huggard's statement, just quoted, may seem to be extreme, but it points out a cause for the so-called temperamental idiosyncrasy which may consist physiologically in a lowered neurovascular tone. This condition has been met by limited residence in colder, or the native climates, as when the English limit their stay in India and return home on furlough, and by cold bathing, etc.

When we come to apply these facts and conclusions to disease and its treatment we may say that we have in cold a powerful neurovascular tonic particularly adaptable to chronic forms of disease, such as tuberculosis, and that climatic cold is often the most practical form available, being particularly desirable for those whose ancestry lived in a climate colder than that in which the patient now finds himself.

When the change is not extreme, as when one migrates from Maine or Minnesota with an average annual mean of 40 F. to Southern California at 60 to 65 F. the effect may not be apparent in the healthy in one generation; but when tuberculosis is present, especially in the second generation, it would seem that a reeducation of the neurovascular system is of prime importance, and that such persons should resort to hydrotherapy, higher latitudes, or higher altitudes.

My personal experience is limited to practice in four states between the mean annual isotherms of 40 and 60 F. I have always found the out-door life practicable for tuberculosis patients, though decidedly more expensive and difficult in the New England States, with the disadvantage of nearness to the sea and sea level. Even there the winters seemed to be more favorable to the treatment of the disease than the summers. In the higher and drier mountain climate of California, with a higher temperature, the cold of winter has been welcome as an important means to many a cure.

5. Woodruff, C. E.: The Effects of Tropical Light on White Men, New York, Rebman Company.
6. Huggard: Handbook of Climatic Treatment, etc., New York, MacMillan Company.

THE CLIMATIC PRESCRIPTION

The choice of a suitable climate is not always made by the physician for his patient. Frequently patients come to their "medical adviser" with ready-made climatic prescriptions just as they do with ready-made diagnoses, expecting him to agree with them that their "complaint" is so and so, and that they need to go to such and such a resort. He complacently agrees and they go wherever they choose. Sometimes the choice is made of a warm climate because it is easy to live out of doors—a worthy aim, but the ease of living out of doors is a relative matter which may vary between wide limits, and what may seem to be justifiable as reasonable animal comfort may in reality prove fatal luxury.

In conclusion I would say that cold is indicated as a neurovascular and general tonic in tuberculosis. That it may be used in some form in all stages, and that early cases should be given the benefit of the therapeutic use of cold water or cold air, or both.

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THE PROBABLE CAUSE AND LOGICAL TREATMENT OF EPILEPSY

A PRELIMINARY REPORT

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About seven years ago, I began the surgical treatment of constipation of mechanical origin due to such conditions, for example, as displacements, malformations, adhesions, angulations, plications, dilatations, atrophies and various distortions of the intestines. The general conditions calling for operative correction of the intestines were not so much the constipation itself as the constitutional states that were caused by the constipation. Or, going a step further back in the chain of etiologic sequence, it became evident that the toxic state of the system, the word "toxic" being used in its original and broad sense, must have originated in the intestines either through (*a*) deleterious additions to the food before ingestion, or (*b*) as the result of secondary chemical changes in the food after ingestion, or (*c*) as the consequence of bacterial activity in either the normal or adventitious flora of the intestinal tract, or (*d*) as the result of the cooperation of any two or all three of these sources of possible toxic supply.

In the course of this experience, I early encountered certain cases in which epilepsy occurred as a complication of constipation and of other and more usual constitutional states that were caused by constipation. I did not at first recognize it as having even a probable sequent relation to the condition of the intestines which was demonstrably the cause of the constipation. It was, in fact, totally disregarded in such of these early cases as came to operation. The sequel, however, finally forced on me a recognition of three significant facts. The first was a fact well known to the medical profession, namely, that epileptics are very generally constipated, or, as I found to be true,

all of them are constipated. The second was that certain epileptics once permanently cured of their constipation ceased to have epilepsy, another fact in consonance with the general experience of the profession to the effect that laxatives are the best remedies with which to minimize both the frequency and the severity of epileptic attacks. The third and equally significant fact impressed on me was that, while all epileptics are constipated, only a relatively few constipated persons have epilepsy.

The explanation of these facts taken together, and especially of the third fact considered either in relation with the others or by itself, logically required the existence of another etiologic factor, the presence of which would account for the existence of epilepsy under given conditions in one case, and the absence of which would account for the absence of epilepsy under the same conditions in another case. In this connection the toxic factor that I had long recognized to be present not only in all cases of chronic constipation of mechanical origin, but especially in all epileptics, assumed a new and more potential significance. It was apparent, however, that while the general principle of toxicity obtained, there must be some definite or specific poison or toxin to account for the equally definite and specific phenomena presented in these cases.

This view was held in mind in the further development of my surgical management of the perfectly obvious lesion presented in all of these cases, namely, mechanical interference with the normal activity of the bowels, the only lesion, by the way, which has been demonstrated in 100 per cent. of epileptics that have come under my observation. It so happened that I had treated all of my earlier cases by replacement and fixation of the colon after my method of retroperitoneal implantation, the details of which I have already reported.[1] When I later incidentally ascertained that these patients, five in all, had been free from epilepsy following operation, for periods varying from seven months to more than three years, I was impressed, first, that the whole difficulty had been in the colon and, second, that the restoration of the fecal current had resulted in carrying off the poison, whatever its character. I then found a patient of whose epilepsy I had taken no account, but in whose case I had successfully operated for intestinal stasis four months before, but in which the epilepsy had only been reduced from grand mal to petit mal. In the light of this case it seemed to me that, considering the gravity of the disease and the obvious fact that the colon was the seat of the difficulty, the more logical procedure would be to remove the colon. I then did colectomy in my next two cases, both of which had grand mal, with a satisfactory surgical recovery in both instances. In both cases there was immediate cessation of the epileptic attacks. In one there have been two slight attacks of petit mal in the six months that have since elapsed. The other patient, who had had from one to four attacks daily before operation left the hospital at the end of three weeks without having had a seizure. She continued well, her bowels moved freely several times daily, she ate well, and was up and about when, at the end of three weeks, she suddenly developed status epilepticus from which she died at the end of seventy hours. A necropsy revealed an acute dilatation of the duodenum as the only lesion. It was caused by traction exerted by and through the mesocolon from the weight of the rather heavy omentum that I had left after the colectomy. This taught me two important lessons, namely, first, what I had really known before, that the ptosic condition of the mesocolon, whether effected by the weight of a loaded colon or by that of a fat omentum or by both, could produce obstructive angulation of the duodenum, and second, that the specific poison of epilepsy, whatever its character, was elaborated in the duodenum—a conclusion which conforms to the general views of Bloodgood, Draper and others with reference to the duodenal origin of other and non-specific intestinal toxins.

Another lesson that I learned from these and other cases was that, although surgically successful, colectomy, whether done on epileptics or non-epileptics, was an operation involving much traumatism and consequent surgical risk. It seemed to me, therefore, that it would be wise practice to do the colectomy at two stages, the first being simply an ileosigmoidostomy or short-circuit procedure, and the second being the removal of the colon, a considerable interval being permitted to intervene between the two procedures. As I had previously done a number of short-circuit operations in non-epileptics with no unpleasant sequelae and therefore with no necessity for a secondary operation, I felt that, in these epileptic cases, I would be able by the same procedure to give my patient the benefit of two chances. One was that the second half of the colectomy, or the colectomy proper, might not need to be done, and the second was that, if a colectomy had to be done, the surgical risk would be diminished by the fact that it was already half done. I accordingly did several primary ileosigmoidostomies in this class of cases. As expected, the operation was followed by much less shock and the patients made a more prompt convalescence than in the original colectomy cases. The constipation was in all instances promptly overcome, and very generally there was an immediate disappearance of the epileptic seizures. In one case, the home physician wrote me that his patient seemed like a new man, "one who had thoroughly recovered from a prolonged alcoholic debauch"; in another, there had been only a few "sensations" instead of the former convulsive attacks; in a third, there had been no improvement, while others were well and have since remained so. In the case of the man first mentioned, who seemed so perfectly well, there suddenly occurred a series of violent convulsive attacks, and the same thing happened a little later to the patient who had had only "sensations." I advised both patients to return for the secondary operation, the colectomy, as I felt that the sudden change in the trend of both cases toward recovery was due to the reloading of the colon by the regurgitation of feces above the point of anastomosis. This proved to be true. The colon with contents in one case weighed 6 pounds; in the other, 4 pounds. The lesson taught by this experience, as contrasted with that in non-epileptics was, first, that the feces coming down from the small intestines were extraordinarily toxic, that the reloading of the now inactive colon with this epileptic poison resulted in an "overdose" and the consequently aggravated seizures and, finally, that while ileosigmoidostomy might be a relatively safe operation in non-epileptics, the toxicity of the intestinal content made it an unsafe measure in epileptics.

While all this was going on, a rapidly increasing experience had brought me an increasing familiarity

1. Reed, C. A. L.: Fixation of the Ptosic Stomach and Colon by Retroperitoneal Implantation, THE JOURNAL A. M. A., March 28, 1914, p. 999.

with the clinical picture of epilepsy in all its forms. The first thing in the way of a generalization that impressed me was the complete and surprising absence of the hereditary factor in all the histories. In only one instance was there more than one case in one family. I was also unable to find any case of so-called "traumatic" epilepsy of that type usually implied by the term, namely, of injury to the head, although I found numerous cases in which a fall or strain or other injury was the manifest cause of the splanchnoptosis present. The old type of so-called "idiopathic" epilepsy has, of course, gone the way of all idiopathic things, such for instance as idiopathic peritonitis, until the very word itself is on the index expurgatorius of all physicians with intelligence enough to know that every effect is the result of a cause.

On the contrary, every phase of the disease seemed to emphasize the existence of a poison of intestinal origin. There were the hebetude and mental depression which always occur when there is hyperabsorption of intestinal toxins—the word toxin being here used in its new and restrictive sense of a poison of bacterial origin. There was the vertigo, often without, often with an instant of unconsciousness, but still vertigo, very similar to what healthy persons experience when they are "bilious," which is another word for torpidity and hyperabsorption. There were the convulsions not entirely unlike those of tetanus, of known toxic origin, or not entirely unlike those produced by strychnin, a known poison. There was the dilatation of the pupils, not entirely unlike that which occurs in advanced toxemias. There was the high blood tension, something like that which occurs in the known acute infections. There was the temperature vacillation, less in range but still a vacillation, such as occurs in recognized septic states.

In other words, epileptics have a low mean average of temperature—97 plus rather than 98 degrees—with a tendency to vacillate between 96 and 99.5. These lower extremes sometimes cause a feeling of chilliness or even slight rigor, although the higher reaches, within the limits indicated, seldom cause a feeling of heat. The vacillation reaches its maximum just before a seizure or, more properly, an explosion, after which the temperature again approximates the mean average of that particular case.

There was the salivation not unlike the salivation in hydrophobia of known bacterial origin. There are the authentic cases of epilepsy cured by an attack of typhoid fever, a process suggestive that it was the antibodes thus formed that destroyed the original infection. There was the constant tendency to the formation of gas with a peculiarly, I should say distinctly, offensive odor. This gas-forming process was most marked near or at the time of convulsion, when the odor seemed to permeate all the secretions — a condition suggestive of the odor of burnt powder following an explosion.

Then, there were other facts that impressed me. The influence of a protein diet in making epilepsy worse may have some relation to the fact that protein mediums are especially favorable to bacterial cultivation. As I have stated, in only a single instance have I encountered a family with more than one epileptic in it. If the poison were of chemical or non-bacterial origin, why were not other members of the family, eating the same diet, living under the same conditions, affected the same way? If it came from that source, why did it not come sooner or later? The cause of epilepsy must be as persistent as its effects. If it were of chemical, that is, non-bacterial origin, why should it persist after the particular food to which it was attributed had no longer been used. For it is quite inconceivable that offending food should continue to be used through months and years and, particularly, without affecting more than one member of the family during all that time. These and possibly other considerations brought me to the definite conception that the poison, a true toxin, must be the result of bacterial infection, and that the infection must be specific in character. It seemed to me, furthermore, that experiences which I have already related tended to amplify this conception. Thus, in the cases in which the epilepsy disappeared after restoration of the fecal current, it would seem that the infection had been confined chiefly, if not entirely, to the mucous surface from which it could be readily swept away by ingesta and secretions: in cases in which there were some remaining petit mal, it would seem as if there might be some remaining infection in the mucous follicles; while in those cases in which the cumulative and recumulative effects were expressed by convulsions after operation, it would seem as if there might be deep follicular or even interstitial infection, with possible contamination of the blood, with the specific bacterium or its toxin or both. These considerations having been fortified by preliminary bacterial studies of the blood and the alvine dejections as well as of the contents and walls of removed colons — the present publication of which would be premature—and having thus impressed me as being valid, it occurred to me that, in those cases in which relief from the epilepsy did not follow the restoration of the intestinal function, the principle of immunization by vaccination might be applied with advantage.

About the time I reached this conclusion, I had two more short-circuited cases in which surgical recovery with disappearance of the epilepsy followed operation, but in both of which there had been recurrence of the seizures or explosions. In one of them there had been from two to five attacks every day before operation. This patient in the midst of a perfect convalescence suddenly developed the worst case of status epilepticus that I have seen. In the other, there occurred two convulsive seizures to tell the tale that the colon had again loaded. Neither patient was in physical condition to justify colectomy even as an emergency operation. In both cases I ordered autogenous vaccination made by usual cultural methods from both the blood and the alvine secretions. The serologic work was placed in the hands of a recognized and distinguished expert, whose detailed report will appear with my final report on the subject. It is sufficient for my present purpose to say that both cases, even the status epilepticus, have completely cleared up under the treatment. It is also well for me to add that I have adopted this method of treatment as a routine in all cases, and so far with gratifying results. In the meantime the pathologic conditions are being carefully studied by a distinguished specialist in that department. His report too will be incorporated with my final record.

In view of these and other experiences, chiefly clinical, I have been brought to think that:

1. Epilepsy is caused by a specific infection, probably a bacillus of the gas-forming series.

2. The infection is located in the intestinal canal, probably primarily in the duodenum, always finally in the colon, and may be superficial, intrafollicular or

interstitial, or may, and in certain cases, probably does, involve the blood as a propagating medium.

3. The infection seems to be made effective primarily through constipation of mechanical origin.

4. The relief of the mechanical cause of the constipation with restoration of bowel function results in the cure of epilepsy in cases in which the infection is probably superficial.

5. The principle of immunization holds good in the treatment of cases in which the infection obviously lies deeper, in all of which autogenous vaccination may well be applied as a matter of routine.

This preliminary report in simple narrative form is submitted at this time in the hope that it may stimulate investigation at other hands along the same lines. In due season, I hope to lay the further details of my work before the profession. In the meantime I shall be grateful for the views of all practitioners whose experience has given them distinct opinions about the nature and treatment of a disease which has baffled science through the ages and the centuries.

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FULGURATION TREATMENT OF TUMORS OF THE BLADDER *

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It is now nearly five years since Beer made his preliminary report on a new method of treating neoplasms of the urinary bladder. During this time this method of treatment has been employed by surgeons in all parts of this country, so that it may be safely stated that for the treatment of papillomas of the bladder it has completely displaced all other methods of treatment in use prior to the introduction of this new form of therapy. This applies to the largest percentage of clinical cases. Occasionally a patient may be seen in whom cystoscopy cannot be tolerated, or, on the other hand, the bladder may be completely filled with papillomas, so that intravesical manipulation cannot be carried out. In this very small group of cases it becomes necessary to resort to suprapubic cystotomy, and to treat the tumors by fulguration through the suprapubic opening, or possibly by a resection of the tumor with sparking.

The results of this mode of treatment for bladder papillomas have been so uniformly successful that modern urinary surgery absolutely demands this form of treatment in these types of tumors. Although the method is not so universally employed in Europe as it is in this country, the results of its use are being reported more and more frequently and it is safe to assume that within a short time it will enjoy the wide application abroad that it does in America. Nothing has stimulated the general interest in the treatment of papillomas as has the use of the high-frequency current, which fact is evidenced by many recent publications dealing with this subject.

Synonyms.—One of the striking features of a review of the literature of this subject is the various names that have been used by different authors in their writings. Beer, in his original as well as subsequent publications, refers to the treatment of these tumors by a "high-frequency current." The term "fulguration" has been used by many but is very frequently objected to, it being claimed that it is not a true process of fulguration. Thomas prefers the term "high-frequency desiccation," while high-frequency cauterization, electric cauterization, the bipolar spark, electric coagulation, thermopenetration and diathermy have been used by various authors. It can readily be seen that there is no uniform term describing this form of treatment in use at present.

Selection of Cases.—Of prime importance with this, as with any form of treatment, is the fact that its success depends on a careful, judicious selection of cases. This was early recognized by Beer, for in his second publication he stated that all cases should be studied microscopically and all malignant cases excluded from this therapy. In order to determine definitely the nature of the tumor, whether benign or malignant, it has been suggested that a small piece of the tumor be removed for histologic study by means of an operating cystoscope. *This procedure has been condemned by many as being not only unsatisfactory, but positively dangerous.*

It may not always be possible to obtain tissue for histologic study. Beer has suggested that "a careful and experienced worker will be able to decide from the lack of clinical result that he is dealing with a growth that does not respond; in other words, he is dealing with a malignant growth." This does not, however, hold true in each and every case, for it is quite possible that in a given case in which treatment was administered elsewhere and no result obtained, that a tumor may still be benign, or again because a tumor does not yield to treatment it must necessarily be malignant.

The best results have been obtained in papillomas of primary growth or in papillomas that have been previously operated on; that is, in cases with recurrences. These recurrences may be seen at the site from which the tumor was removed by a surgical operation; although not infrequently one sees these so-called recurrences in parts of the bladder remote from the primary growth, while the site from which the primary tumor was removed is free from neoplasm.

If one is dealing with such a case, it is questionable whether it can be called a "true recurrence," for, cystoscopically, there is no tumor at the site from which the former growth was removed. Under such conditions one should look on these as true new tumors.

In former writings, these so-called recurrences were explained as being the results of inoculation due to faulty technic at the time of operation. Statements were made attributing these recurrences to careless wiping with sponges, as well as to careless manipulation of retractors. In a case recently reported it was stated that the recurrences were found in that part of the bladder wall which had been covered by the retractor. These technical errors can be eliminated in cases in which the high-frequency current has been used.

In cases of recurrences, in which a suprapubic operation had been performed, and the recurrences are found in parts of the bladder other than that from which the tumor was removed, one must consider the possibility of having overlooked a small tumor at the time of operation.

* Read at the joint meeting of the Chicago Medical and Chicago Urological societies, Jan. 13, 1915.

TECHNIC

The patient is prepared for cystoscopic examination. The bladder is distended with boric solution. A ureteral catheterizing cystoscope is passed into the bladder, and a fulguration catheter is introduced through the catheter channel into the bladder. The tumor, or one of the tumors, if there are multiple growths, is located and the catheter passed forward to the tumor. The method of applying the current is variable. Some plunge the wire directly into the substance of the tumor, while others prefer to leave a small gap between the end of the wire and the growth. I have worked both ways, and it does not seem to make much difference in the results.

Two types of current have been employed, the unipolar or Oudin, and the bipolar or D'Arsonval. If the bipolar current is used, one pole is connected with the fulguration catheter and the other terminates in an electrode, the placing of which depends on the location of the tumor. If the tumor occupies the base of the bladder, a large flat plate may be placed under the buttocks, or an electrode may be placed in the rectum, whereas, if it occupies the upper wall of the bladder, a large flat plate is placed over the suprapubic area. I have always used the portable apparatus made by Wappler, and it has given very satisfactory results.

One of the former difficulties in carrying out this procedure was the inconvenience caused by the melting away of the insulating cable, so that after a certain amount of treatment it became necessary to withdraw the cable and cut off the end. This inconvenience has now been overcome by the use of the fulguration catheter, the end of which is made of bone. The cable being placed on the inside of this catheter also makes it easier to manipulate, and insures better insulation.

Portion of the Tumor to Which One Should Begin Making Application.—In small growths there is but one course to pursue, and that is to begin at the periphery. These small papillomas, if they are thoroughly sparked, require but one or two treatments for their complete removal. In very large growths, it might be desirable to adopt a different mode of procedure, namely, to apply the current directly to the pedicle of the tumor in the endeavor to free the tumor from its pedicle. If this procedure is successful, one accomplishes at one sitting the same result that would require numerous treatments if one began sparking at the periphery. Even in large tumors, however, it is often impossible to locate the pedicle definitely, and, consequently, this procedure cannot be carried out, so that starting at the periphery is the method most frequently used. With the object in view of accomplishing the same end-result, namely, the removal of the growth in one sitting, some surgeons prefer to use a snare when dealing with large pedunculated tumors. Then, after the major part of the tumor has been removed, the high-frequency current is applied to the base or the remainder of the tumor.

The current is controlled by means of the foot switch. When the current has been turned on one can see bubbles emanating from the tumor and rising to the top of the bladder. At the same time there is a blanching of the tumor, so that the entire part of the tumor which has been treated becomes white, and its cystoscopic appearance is changed.

The Element of Pain.—This depends almost entirely on the pain incident to cystoscopy, for not infrequently one sees patients who will not tolerate instrumentation of any kind. If cystoscopy is well tolerated, this element in the production of pain is eliminated. The amount of pain can be further reduced by the use of some local anesthesia in the urethra.

The Pain Incident to the Treatment.—As long as the high-frequency current is applied to the periphery of the tumor, the patient has no pain. When most of the tumor has been removed, so that only its base remains to be treated, pain is quite frequently complained of. The same applies when the end of the fulguration cable touches the mucous membrane of the bladder. When the technic is carried out perfectly, it is rare that patients complain of pain, and I have made it a rule that, when working at the periphery of a tumor, should the patient complain of pain, something is wrong with my technic or apparatus, and I aim to find and correct the cause.

Duration of the Treatment.—The duration of treatment is variable. In large growths one can spark from three to five minutes, especially as long as one is working away from the base of the tumor. It occasionally occurs, in highly nervous and sensitive patients, that one can make only one or two applications of short duration at each treatment.

Number of Treatments.—The number of treatments depends, in part, on the duration of each individual sparking. In the tolerant patient, one very often accomplishes more in one or two sittings of long duration than in half a dozen or more sparkings of short duration in the intolerant patient. As an average, three or four applications usually suffice.

Complications.—Another interesting fact obtained from a review of the literature on this subject is that nothing but good results are to be found. I have not been able to find one untoward result recorded in the literature at my command. This surely speaks well for this form of treatment, especially when one considers that the reports are the result of a new method of treatment and are recorded from men in all sections of the country. Doubtless, as time goes on, those who have had untoward results and undesirable complications will publish them, thereby preventing similar experiences in the hands of others. Unfortunately, we are prone to report our successful cases, and not to mention our bad results. If a new therapeutic measure has limitations, or if it is not free from danger in its application, it should be our aim to report the bad results, complications and limitations, in order to be better able to judge of the true value of its therapeutic merit as well as to avoid undesirable complications in our future work.

Treatment as a Hemostatic.—Many of the papilloma cases have, as their only symptom, hematuria. This may be of long or short duration, continuous or intermittent. Not infrequently the high-frequency current stops the bleeding permanently, so that after the first sparking the urine clears up and remains free from macroscopic blood. Several authors have recommended its use as a hemostatic, advising a careful search for the bleeding point and the application of the spark directly to it. In the cases of carcinoma in which the high-frequency current was used through the cystoscope, I was unable to see any definite hemostatic action.

Fragments of Tumors.—Often, during the course of sparking of a very large tumor, small pieces of tissue adhere to the end of the fulguration catheter, so that it becomes necessary to withdraw the catheter and remove them before sparking can be continued. For purposes of histologic study, these small pieces, as well as the fragments obtained after emptying the bladder, were saved and sections made of them. In most of the cases the sections showed a loss of structure, and

stained poorly, so that their histologic study was not very satisfactory.

Local Reaction.—As a result of the application of the high-frequency current, there occurs a certain amount of local reaction in the wall of the bladder, depending in part at least on the intensity and duration of the treatment. This local reaction has been described by several authors, attention having been called to the fact that it may resemble and be mistaken for carcinoma. That such mistakes are possible and have occurred is known. In a case recently reported just this error was made. The patient had been treated with a high-frequency current. At a subsequent cystoscopic examination, after the fulguration, this reaction was looked on as carcinoma, and the patient immediately was operated on and resection of the bladder was carried out. Sections failed to reveal anything resembling carcinoma.

CLASSIFICATION

For convenience the cases treated have been placed in four groups: papillomas, papillary carcinoma, carcinoma and polyps.

1. Papillomas.—In all, ten cases of papillomas have been treated. Regarding the incidence of sex there were eight males and two females. The oldest patient was 79, and the youngest 29. In two of the cases, the tumors were multiple. In one of the cases (a woman) there were found three tumors. The other case of multiple tumors occurred in a man, and there were six tumors present. The number of treatments given was as follows: In four cases, one sparking; in two cases, two sparkings; in two cases, three sparkings; in one case, four sparkings; in one case, five sparkings.

Two of the cases treated were of so-called recurrences, one after a suprapubic removal of the tumor, which was situated near the left ureteral orifice and which had been removed surgically in the days prior to fulguration. The other was a secondary growth after the first was removed by fulguration. In nine of the cases the treatment was carried out through the cystoscope, and in one through the suprapubic opening. Of these ten cases, eight are permanently cured, having been cystoscoped at various intervals since their discharge. One case is still under treatment and one has passed from observation.

2. Papillary Carcinoma.—There was one case of papillary carcinoma. Briefly the history is as follows: The patient had painless hematuria for three years. A diagnosis of papilloma was made, and the tumor was removed by surgical operation. It was situated near the left ureteral orifice. Three months after this operation, the patient again had profuse hematuria. I saw him six weeks after the onset of this hematuria. Cystoscopically a tumor was seen near the left ureteral orifice. With a cystoscopic rongeur a large piece was removed, and the diagnosis of papillary carcinoma was made. The sections from his previous operation were then looked up and it was found that a diagnosis of papillary carcinoma had been made at the time of his previous surgical operation. The patient refused any further surgical treatment, as the only possible operation considered was wide excision and transplantation of the ureter. The use of the high-frequency current was suggested to which the patient readily gave his consent. He received in all four sparkings. He has not had any further attacks of hematuria, and at the last cystoscopic examination, made Feb. 16, 1915, he was free from recurrence.

3. Carcinoma.—There were six cases of carcinoma, four in males and two in females. The age varied from 52 to 70 years. Three of the patients were treated through the cystoscope without any result. The treatment was very painful and it had no effect on the growths. It has recently been recommended that these carcinomas be removed, preferably by the cautery, after suprapubic cystotomy, and that then the base be sparked through the suprapubic opening. Three cases were subjected to suprapubic resection and bipolar sparking. One patient, at the time of her discharge from the hospital, showed a perfectly normal bladder on cystoscopic examination. Within six months she had a local recurrence. Another patient died six months later with an extensive carcinomatosis of the bladder. The third has passed from observation.

4. Polyps.—There was one case of polyp. The patient was a man. The polyp was large and hung from the internal urethral orifice, so that the patient had pain at the end of urination, and occasionally hematuria. One application of the high-frequency spark caused a complete disappearance of the polyp.

THE EFFECT OF VARIOUS PROCEDURES ON THE PASSAGE OF LIQUIDS FROM THE STOMACH *

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A large amount of experimental and clinical work has been done in the study of gastric function since the time of Beaumont, especially by Pawlow, Boas, Ewald, Cannon and others. Most of this work has dealt with the study of gastric secretion and the chemistry of digestion. Such work and thought as has been devoted to the emptying of the stomach has been largely clinical, although there has been some experimental and theoretical considerations of this subject in recent years.

When considering this subject it is surprising to find how many accepted facts concerning the emptying power of the stomach are conclusions, correct or otherwise, which have existed for so long that they are taken for granted as true, without experimental foundation.

It has been presumed by many that hyperchlorhydria is responsible for an increased action of the gastric musculature, particularly near the pyloric ring, thereby producing an emptying of the stomach more rapid than normal. On the contrary, Cannon[1] and others have shown, in a series of experiments in which this condition was artificially produced, that there was some delay in the emptying of the stomach.

A vague impression has always prevailed that posture or exercise have some influence on the emptying of the stomach. For instance, we instruct people not to lie down after a meal or to lie down at a given time only, before and after eating. Some experimental

* From the Department of Medicine, St. Louis University.

1. Cannon, W. B.: The Acid Control of the Pylorus, Am. Jour. Physiol., 1907, v, 283.

work has been done with this in mind, but there is still room for much work in determining the exact influence of these factors in emptying the stomach. E. Ageron[2] states that, "the reclining position in bed, especially with the pelvis raised, materially facilitates the emptying of the atonic stomach."

A study of the temperature of the stomach contents has also thrown some light on our knowledge of the emptying of the stomach. Boas[3] found that, if 400 c.c. of water is ingested while fasting, only 50 or 100 c.c. is left after thirty minutes in normal stomachs. If more is found he thinks that a state of motor insufficiency may be assumed. Johannes Mueller[4] found that liquids left the stomach more rapidly when at body temperature than when cooled to 5 C., or heated to 50 C.

By these experiments we will attempt to show (1) the effect of exercise, massage and rest; (2) the influence of posture; (3) the influence of temperature; (4) the influence of the reaction on the emptying of the stomach.

Conclusions, to be most accurate, must be drawn from a study of individuals as nearly normal as possible. Perhaps no group of subjects for this set of experiments could be more satisfactory than able-bodied young medical students. Volunteers were sought and they lent themselves most readily to the furtherance of our experiments. Only young men free from organic lesions, from gastric disturbances, from constipation, etc., were employed.

The subject presented himself at 8 a. m., having taken no food or drink since early on the previous evening. His stomach was, therefore, presumably empty.

By our method, the young man drank 500 c.c. of water at a given temperature. After a given time, that which remained in the stomach was removed by means of a moderately soft stomach tube. We were careful to be as certain as possible that all the remaining content was removed.

These men were trained to take the tube before the experiments were commenced. They took the tube easily for the most part. Of course it is possible that in some cases not all of the fluid was obtained by the tube. It has been shown by Harmer and Dodd[5] that there is a great error in many cases in removing fluid from the stomach by the tube. Our results were so consistent that this possibility may be ignored, except in a few cases.

TABLE 1.—EXPERIMENT 1 (INFLUENCE OF MODERATE EXERCISE AND REST)

Position	Quantity c.c.	Temp. C.	No. Men	Time Minutes	Fluid Rem. c.c.
Standing (quiet)	500	20	18	15	223
Standing 3 exercises	500	20	18	15	199

It is important to know whether or not exercise has any influence on the emptying of the stomach, and if so in what manner. Eighteen men were used in the experiment. On the first morning the subject was given 500 c.c. of water at 20 C., and was instructed to stand or sit quietly. At the end of fifteen minutes his stomach was emptied. In a few preliminary experiments the water was not removed for thirty minutes, and one hour, but it was found that the results could not be satisfactory for study, many stomachs being nearly empty at the end of that time.

Next day the student was given 500 c.c. of water at 20 C. and at intervals was required to take three sets of exercises of three each, taking in all five minutes to complete them. In the first he bent over forcibly, with knees stiffened and attempted to touch the floor and straighten up. This he did three times. After a short period of rest he bent backward, his arms extending upward, and came forward forcibly; this was repeated three times. In the third exercise he bent his body forward and downward and imitated, with some muscular effort, the lifting of a heavy iron bar with his hands, and the raising of it above his head as high as possible. This was also done three times. At the end of fifteen minutes, including the time required for the exercises, his stomach was emptied. The first experiment was repeated on the third day, and on the fourth day the second was repeated.

The average results tabulated in Table 1 show that exercises of this nature seem to empty the stomach somewhat more rapidly than when the person is quiet.

These experiments were not constant, in that about one-fourth of the cases retained about the same quantity, or more, after the exercise, than when at rest. The average results, therefore, do not show a striking difference. The residue after the exercises varied from 75 c.c. up to the same or a larger quantity than that retained when the patient was quiet.

TABLE 2.—EXPERIMENT 2 (REST, MASSAGE AND STRENUOUS EXERCISE)

Position	Quantity c.c.	Temp. C.	No. Men	Time Minutes	Fluid Rem. c.c.
Standing	500	20	12	15	242
Massage	500	20	12	15	145
Continued, strenuous exercises	500	20	12	15	169

In this set of experiments the massage was practically continuous during the fifteen minutes the water was retained. The massage was a pressure and kneading always toward the pylorus. Forty-eight per cent. of the water was retained when the patient was quiet; 29 per cent. when massage was given and 34 per cent. when continuous exercise was taken. These results were practically constant except in one case which showed the same quantity as when the patient was quiet.

The exercises in this set were the same as in Experiment 1, but were continuous and as vigorous as possible. The fact that the results are constant and the residue smaller with continuous exercise may explain the variations in the residue when light exercise for a short time was given. The continued strenuous exercises were perhaps more nearly equal in the different individuals.

It is probable that the rapid emptying of the stomach resulting from fast walking, as reported by Wulach[6] and Ogarkow, is due, in some way, to activity of the abdominal musculature and in this way corresponds to the results obtained by exercising. It appears that the same result is also accomplished by passive motion or massage.

2. Ageron, E.: Zur Pathogenese der Obstipation, Arch. f. Verdauungskr., October, 1911, p. 584.
3. Boas, J.: Diagnostic und Therapie der Magenkrankheiten, Leipzig, 1911, p. 432.
4. Mueller, Johannes: Ztschr. f. diätet. u. physik. Therap., 1905, viii, 587.
5. Harmer, Torr Wagner, and Dodd, Walter J.: Sources of Error in the Use of the Stomach Tube for Diagnosis, Arch. Int. Med., November, 1913, p. 488.
6. Wulach: Die Verweildauer der verschiedenen Nahrungssubstanzen, im Magen, München. med. Wchnschr., Oct. 31, 1911, p. 2319.

Experiments have shown that substances other than liquids are affected as are liquids by exercise, but are emptied more slowly.

Various conclusions may be drawn from this observation. It will be seen that exercise is contra-indicated in cases of gastric and intestinal indigestion in which there is peristaltic unrest. On the other hand, exercise should prove beneficial in persons having atonic stomachs and weakened gastric motility, as well as in the large number of cases of gastric dilatation and gastroptosis so frequently associated with general visceroptosis.

TABLE 3.—EXPERIMENT 3 (INFLUENCE OF POSTURE)

Position	Quantity c.c.	Temp. C.	No. Men	Time Minutes	Fluid Rem. c.c.
1. Standing	500	20	11	15	286
2. Lying (right side)	500	20	10	15	201
3. Lying (left side)	500	20	11	15	325
4. Lying (back)	500	20	11	15	233

Eleven men were employed. Five hundred c.c. of water were taken at 20 C. The amount retained after standing fifteen minutes averaged 286 c.c. When lying on the right side 201 c.c. of water were retained, which was less than in any of the other three postures. It would seem, therefore, that gravity is the factor here which helps the stomach to empty itself more rapidly. It is also possible that the increased pressure-weight on the pyloric ring increases the rapidity of the opening and closing of the orifice. The same theory holds good when the subject lies on the left side, for 324 c.c. were retained, which is considerably more than in any other posture; for most of the water lies in the fundus and the weight is taken from the pyloric ring. There is no doubt that this position retarded the passage into the duodenum. Lying on the back caused 233 c.c. to be retained, which is less than in the standing posture but is about the same as in the standing postures in the other experiments. The emptying was slightly less rapid than when the subject was lying on the right side, but was much more pronounced than in the left-side posture.

Ogarkow after investigations carried out on himself, found that gastric motility was strongest (emptying more completely in a given time) when lying on the right side or walking rapidly. Standing, sitting, lying on the left side and slow walking were least favorable; while lying on the stomach or back was intermediate in effect.

The striking result of this set of experiments was the retardation due to lying on the left side. This has some clinical significance. Lying on the left side should be avoided after eating or drinking by patients with tendencies toward atonic dilatation, fermentative conditions and ptosis. Lying on the right side

TABLE 4.—EXPERIMENT 4 (INFLUENCE OF TEMPERATURE)

Position	Quantity c.c.	Temp. C.	No. Men	Time Minutes	Fluid Rem. c.c.
1. Standing	500	45	7	15	232
2. Standing	500	20	56	15	240
3. Standing	500	10	7	15	284

might be favorable in these conditions. The left position should be of value in excessive gastric motility. Lying on the back is not necessarily a detriment to the emptying of the stomach.

As previously shown, Mueller states that he has shown in experiments on animals, and Mallory[7] in reviewing the physiology of gastric motility also states that hot and cold fluids remain in the stomach longer than those at 38 C.

Seven men were given 500 c.c. of water at 45 C., which was warm but not hot. The amount retained averaged 232 c.c. at the end of fifteen minutes. The following morning, at a temperature of 10 C., 284 c.c. were retained, showing that warm water is emptied somewhat more rapidly than cold water. It will be seen that lukewarm water (38 C.) will not empty so rapidly as water at 45 C. but the difference is not great.

It is probable that cold liquids quickly rise in temperature when ingested and that hot substances fall to the mean body temperature almost as quickly. It is, therefore, probable that this adjustment to the body temperature accounts for the absence of any striking effects in their influence on gastric emptying.

It has been shown that the motor function and the emptying time of the stomach is constantly normal only when the percentage of hydrochloric acid is normal. When it is increased and a state of hyperacidity is brought about, there is increased activity of the gastric musculature, the pyloric ring opens and part of the contents is expelled into the duodenum. When the acid contents come in contact with the duodenal mucosa, however, a reflex spasm of the pylorus and closure of the pyloric ring with retention of the contents occurs, ultimately bringing about a retardation of the emptying time (Cannon). Von Tabora[8] studied gastric peristalsis and motility in healthy individuals and in those having hypochlorhydria and hyperchlorhydria. He used bismuth alone and combined it with hydrochloric acid and with oils. When hydrochloric acid was used the peristalsis was deeper and more energetic, but the time of emptying was about 50 per cent. longer.

TABLE 5.—EXPERIMENT 5 (INFLUENCE OF REACTION)

Position	Quantity c.c.	Temp. C.	No. Men	Time Minutes	Fluid Rem. c.c.
1. Standing	500	20	12	15	220
2. Standing	500*	20	12	15	263
3. Standing	500†	20	12	15	229

* The liquid used in this experiment consisted of a 1 per cent. solution of hydrochloric acid.

† The liquid used in this experiment contained 5 grains of sodium bicarbonate.

Twelve men were employed in our experiment. First they were given as a control, 500 c.c. of water at 20 C. At the end of fifteen minutes 220 c.c. was the average amount retained. Following this, on the next day, they were given 500 c.c. of hydrochloric acid 1 per cent. solution. After fifteen minutes, 263 c.c. remained. The next day 5 gm. of sodium bicarbonate was added to the water and 229 c.c. remained. These results are entirely in accord with the conclusions of those who do work of this kind. Though the differences are not striking it is evident that the stomach empties itself quicker in the presence of a normal or nearly normal acidity. The introduction of an alkalinized substance, which in our experiments produced a slightly alkaline or neutral reaction of the remaining contents, caused an emptying slightly more rapid than when an acid substance was introduced.

In this set of experiments the results were consistent, especially so when the acid was used. The amount retained with the acid was always from 9 to

7. Mallory, W. J.: The Physiology of Gastric Motility, Med. Rec., New York, Sept. 12, 1914, p. 448.

8. Von Tabora: Ueber die Motorische Magenreflexe, Verhandl. d. deutsch. Kong. f. inn. Med., Wiesbaden, 1911, xxviii, 378.

90 per cent. greater than the amount retained when water alone was used, the average per cent. greater being 24. In two cases the amount retained with the acid was decreased. The fluid obtained when water was used showed an acidity of from 2 to 20, generally from 2 to 5 was found. The explanation of the decreased quantity in the two cases above mentioned may be due to an existing hyperacidity with hypermotility of the musculature and hyperesthesia of the gastric mucosa, as the acidity of contents with water was respectively 10:20. This seems to be borne out by the fact that the total quantity of water retained was only 155 c.c. in the case in which the acidity of the water returned was high.

The facts brought out by these experiments are in keeping with certain clinical facts. In achylia gastrica there is generally a rapid emptying of the stomach. The same thing holds in many cases of chronic gastritis with a low acidity.

In hyperacidity it is common to find a large quantity of gastric content after a Boas-Ewald test breakfast. This is ascribed to hypersecretion. It may well be a delay in emptying due to the high acidity. Some cases of hyperacidity, however, have a rapidly emptying stomach. This may be due to hyperesthesia of the mucosa with a hypermotility brought about by the long action of the high acids in these cases.

SUMMARY

From our experiments in healthy young men we find:

1. Water is emptied from the stomach somewhat more rapidly during exercise than when the subject remains quiet.

2. Posture seems to have a direct influence on the emptying power of the stomach. Lying on the right side causes a more rapid evacuation than in any other position, and lying on the left side has the opposite effect. Lying on the back causes a somewhat more rapid emptying than in the upright position.

3. At 45 C. water leaves the stomach somewhat more rapidly than at 10 C.

4. Normal acidity causes a more rapid emptying than hyperacidity produced artificially by adding hydrochloric acid to the stomach contents. Artificial alkalinity produced by adding sodium bicarbonate to the stomach contents causes the stomach to empty itself slightly less rapidly than under normal conditions, but more so than during hyperacidity.

5. All of these factors may have considerable significance in their bearing on clinical experience.

Alcohol from Nipa Sap.—In the Philippines a good grade of cheap sugar and a fine quality of alcohol are made from the sap of the nipa plant. The government in the development of the commercial possibilities of the islands is endeavoring to promote this industry, and the bureau of forestry has made a compilation of the resources of the island in this respect. It is said there are over 100,000 acres of nipa swamp available in the archipelago, about 90 per cent. of which area has not been touched. Nipa is said to furnish the cheapest raw material in the world for the production of alcohol which may be denatured and used for fuel in motor vehicles at less expense than for gasoline and is fully as efficient. It is stated that a motor built for this fuel would be 20 or 30 per cent. better than a gasoline motor. The total production of alcohol in the islands is about 2,500,000 gallons per season, and only 2 per cent. is denatured for commercial use.

A STUDY OF STREPTOCOCCI FROM PYORRHEA ALVEOLARIS AND FROM APICAL ABSCESSES *

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In recent years much attention has been paid by clinicians to suppurative lesions about the teeth as a source of systemic infections. Considerable statistical material has been accumulated, especially in England, showing the frequent clinical coincidence of pyorrhea alveolaris and apical abscesses with various constitutional disturbances, particularly acute and chronic rheumatism. The literature on this subject has been reviewed by Nodine.[1]

A recent communication by Gilmer and Moody[2] records the results of bacteriologic examinations of some forty dental abscesses. They found that, in a varied flora, the streptococci were the organisms most constantly present. So far as we know, these workers, together with Rosenow, whose paper accompanies theirs, are the only ones who have attacked this problem from a bacteriologic standpoint.

Our own work was carried on in the clinics and laboratories of the University of Minnesota, with funds provided by the Research Commission and Scientific Foundation of the National Dental Association. We have taken cultures from a large series of patients presenting either pyorrhea or dental abscesses, many of whom were suffering from systemic disease; we have isolated and identified the organisms present, and have made animal inoculations to determine their pathogenicity.

The clinical portion of our work has consisted in determining the therapeutic value of eliminating the mouth infections in a selected series of cases of systemic disease, with the use of autogenous vaccines prepared from the mouth bacteria in some cases.

The cases we have had under observation have in the main been patients who presented clinical evidences of rheumatism, either acute or chronic. We have had seventeen cases of arthritis deformans. The results obtained have been very irregular, but we may say that over half of these patients showed improvement, which in a few cases was pronounced; other cases, however, became even worse under treatment. We have taken cultures from five cases of acute rheumatic fever.

Seven cases of endocarditis have been studied. In two of these patients the heart condition has been vastly improved. We have had two patients who developed a fatal streptococcemia from mouth infections. One of these, who came to necropsy, had a most marked vegetative endocarditis of the mitral valve; no necropsy was obtained in the other case, but the organisms were recovered from the blood.

* The work here reported has been conducted in the laboratories and hospital of the School of Medicine of the University of Minnesota under the auspices of, and with funds provided by, the Research Commission and Scientific Foundation of the National Dental Association.

1. Nodine: Dental Cosmos, lvi, 969.

2. Gilmer and Moody: A Study of the Bacteriology of Alveolar Abscess and Infected Root Canals, THE JOURNAL A. M. A., Dec. 5, 1914, p. 2023.

Aside from the rheumatic patients, we have studied three cases of pernicious anemia, five cases of gastric ulcer, and nine cases of acute iritis. The pernicious anemia cases showed the fluctuation usual in this disease; one man showed a marked progressive increase in the blood count after removing some of the abscessed teeth, but left the hospital before his dental work was completed, and has returned with a low blood count. The gastric ulcer patients, two of whom were of twelve to fourteen years' standing, with frequent recurrences in that time, have not, in a single instance, had a recurrence since eliminating the mouth infections, although two years to five months have elapsed since their dental work was completed. The iritis patients have all shown a marked improvement, beginning in some cases a few hours after removing the abscessed teeth.

We are not in a position to state definitely the value of vaccines in these cases. We believe that the removal of the source of infection in the mouth is of far greater importance than the use of vaccines, but we feel that the latter have been of value as a supplementary treatment in some cases.

The technic employed in taking cultures was developed by Dr. Hartzell with the idea of excluding all the normal mouth bacteria and obtaining only those organisms present in the lesions themselves. To this end the tooth to be cultured was packed off and given a thorough dry cleansing with gauze, after which the area was painted with iodin. In cases in which a local anesthetic was used, the gums about the neck of the tooth were next seared by the actual cautery. After extraction, the root tip, which frequently had the abscess sac adherent to it, was nipped off by a pair of sterile rongeur forceps and dropped into a tube of broth, or of serum broth. Where rongeur forceps were not available, the tooth was grasped well below the neck by a pair of sterile forceps, and the upper end baked in the Bunsen flame; the entire tooth was then dropped into broth. In pyorrhea cases as much pus as possible was expressed, the area cleansed in the same manner, and cultures were made from the material obtained by inserting a sterile curet into the pocket. In the bacteriologic technic employed, our attention was directed solely to the streptococci. There were two reasons for this: First, streptococci were constantly present, and (especially in apical abscesses) were frequently the sole cultivable organism. Second, our immediate problem being the relationship of dental infections to rheumatism, it was thought that a study of the streptococci would be most likely to yield tangible results. Other organisms, however, were frequently noted, such as the *Staphylococcus albus, Bacillus coli, Bacillus proteus,* various spore-bearing aerobes of the *B. subtilis* type, and *Bacillus pyocyaneus.* On several occasions we have obtained a small Gram-positive bacillus which we have been unable to identify, and we have noted a diphtheroid bacillus once. One recent case yielded a pure culture of *Bacillus fecalis alkaligenes.* Only once was the pneumococcus obtained.

Cultures were incubated until a growth appeared, usually in twenty-four to forty-eight hours, after which they were plated either on blood agar or on plain agar, in which latter case the action on blood was later studied in agar slants. In the early part of our work we made a small series of anaerobic cultures and found that the streptococci grew somewhat better this way, but the ultimate results were essentially the same as in the aerobic cultures, and all the work here reported has been carried on aerobically.

Cultures have been taken from 162 cases, and in 150 of these streptococci were obtained. We had hoped to have a considerable number of control cases in which healthy teeth were extracted, but found it almost impossible to obtain material. In seven cases, however, where healthy teeth were extracted, using the same technic, we obtained sterile cultures. On several occasions we have had no growth from abscessed teeth.

The cultural features of these streptococci were studied in eight routine media, namely, blood agar, litmus milk, and broth containing lactose, saccharose, mannite, raffinose, salicin, and inulin. In a considerable number of cases it has been impossible to make a complete study due to the fact that the organisms died out after one or two transfers on artificial media. In almost every case, however, we have tried out the action on blood agar. We used defibrinated sheep's blood or whole rabbit's blood in the proportion of one part to ten parts of agar. In every case but two the colonies on blood agar were surrounded by a green halo. In the two exceptions, the colonies appeared as small gray dots without any change in the surrounding blood agar. In no case were hemolytic streptococci obtained; in this important feature our series differs from that of Gilmer and Moody. In litmus milk almost every strain produced acid, and the majority also clotted the milk.

Since the work of Gordon, and of Andrewes and Horder, it has been customary for investigators studying the streptococcus group to use a series of carbohydrate fermentation tests as a means of classification. In order that our own material might be of some value when considered in relation to the large amount of data which has hitherto been published concerning the fermentation reactions of streptococci from other sources, we have studied the action of a number of our strains on the carbohydrates mentioned. In the early part of our work we used plain broth containing 1 per cent. of the sugar to be tested, with litmus as an indicator. The results are shown in Table 1. We soon abandoned this medium, as the organisms grew in it very slowly or not at all. We

TABLE 1.—FERMENTATION REACTIONS IN CARBOHYDRATE BROTH WITH LITMUS

No.	Blood Agar	Litmus Milk	Lactose	Saccharose	Mannite	Raffinose	Salicin	Inulin
50	Green	No change	Acid	Acid	0	Acid	0	0
51	Green	Acid, coag.	Acid	Acid	0	Acid	0	0
52a	Green	Acid	Acid	Acid	0	Acid	0	0
52b	Green	Acid	Acid	Acid	0	0	Acid	0
55	Green	Acid, coag.	Acid	Acid	0	Acid	0	0
59a	Green	Acid	Acid	Acid	0	0	0	0
59b	Gray	Acid, coag.	Acid	0	Acid	0	Acid	0

next added beef serum to the broth, and sterilized at 60 to 70 C. on several successive days, which semigelatinized the serum. Acidity was determined by titrating against N/20 NaOH. The results obtained with a large series of cases were so irregular and so much at variance with our other experiments that we felt there was some undetected source of error. We then adopted the medium recently described by Holman;[3] this is carbohydrate broth containing beef serum sterilized by passing through a porcelain

3. Holman: Jour. Infect. Dis., xv, 209.

filter, acidity being demonstrated by Andráde's indicator. With this medium we obtained uniform and clear cut results as shown in Table 2.

It will be seen that the majority of our strains ferment salicin, some ferment raffinose, and still others attack both of these sugars. Almost all strains produce acid from lactose and saccharose. A few strains ferment neither salicin nor raffinose. Culture 135 is interesting in that this patient developed a fatal septicemia from a dental infection; 135 M represents the streptococci from the mouth, and 135 B from a blood culture.

From this portion of our work we can conclude that there are constantly present in peridental infections streptococci, which from their action on blood agar, belong to the group designated by Schotmüller as *Streptococcus viridans*. From the fermentation reactions, these belong to the classes *S. mitis, S. salivarius,* and *S. fecalis* of Andrewes and Horder.

To determine the pathogenicity of these streptococci, and in the hope of producing lesions more or less characteristic of rheumatism, a number of animal inoculations were made. For this work we used exclusively rabbits weighing from 800 to 1,000 gm. In almost every instance the injections were intravenous.

The most characteristic feature in these rabbits was the development of a progressive emaciation and weakness in spite of the fact that the animals fed well. We were able in some instances, however, to produce more or less characteristic lesions of the heart, kidneys, aorta and joints.

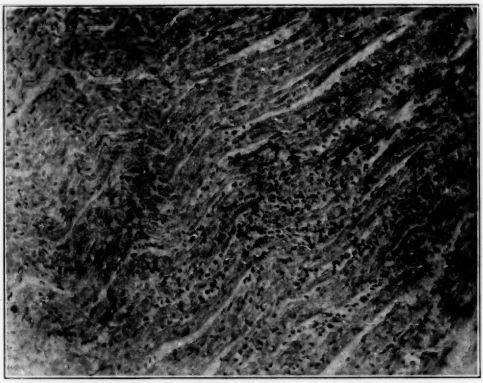

Fig. 1.—Section of heart muscle of rabbit showing diffuse infiltration of lymphocytes throughout.

The dose injected varied from 2 c.c. of a twenty-four-hour broth culture to the centrifuged bacteria from 100 c.c. of a dextrose serum broth culture. The very large doses, as was to be expected, produced death over night, apparently from toxemia. We finally adopted 8 c.c. of a twenty-four-hour broth culture as a standard dose; this amount does not contain enough toxic material to cause immediate symptoms, and usually kills the animal in from two to four weeks. As will be seen, the pathogenicity of these streptococci varied greatly, but for the most part they were of relatively low virulence.

We do not intend to go into details concerning all of these inoculation experiments, but will give the protocols of some of the more interesting, appending to each a summary of the history of the case from which the organisms were obtained.

PROTOCOLS OF EXPERIMENTS

CASE 52.—A man 45 years of age, suffering from a peptic ulcer of several years' duration, accompanied by secondary anemia and pyorrhea alveolaris. The teeth were cleansed and the root surfaces polished; the dead teeth were extracted and from one of the root tips a culture was taken. From this culture streptococci were isolated and a vaccine was prepared, which was given in doses increasing from 20,000,000 to 150,000,000.

In all, seven rabbits were inoculated with streptococci from this patient. Five of these survived the experiments; one died after thirty days showing no gross lesions, and another died after forty days. This rabbit showed a diffuse infiltration of lymphocytes throughout the heart muscle, as shown in Figure 1, and the condition of the aorta shown in Figure 2. Grossly there was a marked puckering and roughening of the aorta, sharply limited to the ascending portion of the arch.

CASE 54.—A man 73 years old, complaining of swelling and pain in the joints of the arms and hands, legs and feet. He presents a picture of old age and joint infection combined, with a profuse pyorrhea alveolaris.

The streptococci obtained from this patient proved nonpathogenic even in massive doses. We attempted to raise its virulence by an ingenious method suggested to us by Dr. W. P. Larson. A rabbit was anesthetized and a few drops of a twenty-four-hour broth culture were injected into the anterior chamber of the eye. In two days the eye was deeply congested and the anterior chamber was filled with pus. Under ether a sterile needle was again plunged into the anterior chamber and some pus aspirated. It yielded a pure culture of the streptococci. The next day 5 c.c. of this culture was injected into the peritoneum of a second rabbit, which died in twenty-four hours with general sepsis—fibrinopurulent peritonitis, pericarditis and septicemia.

One cubic centimeter of the culture from this rabbit was then injected into a third animal, which did not die until three weeks had elapsed. This rabbit showed in the heart muscle numerous miliary nodules of lymphocytic infiltration, with radiating streaks

TABLE 2.—FERMENTATION REACTIONS IN CARBOHYDRATE SERUM BROTH WITH ANDRADE'S INDICATOR

No.	Blood Agar	Litmus Milk	Lactose	Saccharose	Mannite	Raffinose	Salicin	Inulin
110	Green	Acid, coag.	Acid	0	0	0	Acid	0
116	Green	0	Acid	Acid	0	0	Acid	0
121	Green	0	Acid	Acid	0	0	Acid	0
122	Green	Acid	Acid	Acid	0	Acid	Acid	0
123	Green	Acid, coag.	Acid	Acid	0	Acid	Acid	0
124	Green	Acid	Acid	Acid	0	Acid	Acid	0
125	Green	Acid, coag.	Acid	Acid	0	Acid	0	0
127	Green	Acid, coag.	0	Acid	0	0	Acid	0
129	Green	Acid, coag.	Acid	Acid	0	Acid	Acid	0
130	Green	Acid, coag.	Acid	0	0	0	Acid	0
133	Green	Acid, coag.	Acid	Acid	0	Acid	0	0
134	Green	Acid, coag.	Acid	Acid	Acid	0	Acid	0
135M	Green	Acid, coag.	Acid	Acid	0	Acid	0	0
135B	Green	Acid, coag.	Acid	Acid	0	Acid	Acid	0
136	Green	Acid, coag.	Acid	Acid	0	0	0	0
137	Green	Acid, coag.	Acid	Acid	0	0	Acid	0
138	Green	Acid	Acid	Acid	0	0	Acid	0
141	Green	0	0	Acid	0	0	0	0
20	Green	Acid	0	Acid	0	0	0	0
21	Green	Acid, coag.	Acid	Acid	0	0	0	0
22	Green	Acid, coag.	Acid	0	0	0	Acid	0
23	Green	Acid	Acid	Acid	0	0	0	0
27	Green	Acid, coag.	Acid	Acid	0	Acid	0	0
28	Green	Acid, coag.	0	Acid	0	Acid	Acid	0
29	Green	Acid	Acid	Acid	0	0	0	0
32	Green	Acid	Acid	Acid	0	Acid	Acid	0
34	Green	Acid, coag.	Acid	Acid	0	0	0	0
35	Green	Acid, coag.	Acid	Acid	0	Acid	0	0
36	Green	Acid	Acid	Acid	0	Acid	Acid	0

of similar infiltration in the kidneys, principally in the medulla. The animal injected in the eye also died after several weeks; it showed no gross lesions save for lesions in the ascending arch of the aorta, such as were obtained with Case 52. Although this streptococcus was raised in virulence from nil to the maximum, it showed no changes in its cultural characters.

CASE 55.—This patient is a woman 40 years old, who had an attack of acute rheumatism at the age of 10. Her heart was involved at this time and has given her trouble ever since. At 18 she had another similar attack. She has been short of breath on slight exertion, but never had severe heart symptoms until shortly before admission to the hospital, when she developed palpitation, became weak, and had fainting spells. While in the hospital she developed another attack of acute arthritis involving the arms and shoulders.

This patient had pyorrhea and numerous dead teeth, which were extracted. From the root tips of some of the teeth cultures were taken and the *Streptococcus viridans* was isolated. This strain was used to prepare a vaccine which was given in increasing doses of five million to 150 million. After several months the patient left the hospital greatly improved, but as the patient received the benefit of rest and medication during this time we have no proof that the vaccine was of value.

A rabbit injected with centrifuged bacteria from 40 c.c. of a broth culture of this strain died in sixteen days. At necropsy there was found a chronic myocarditis, the heart muscle being streaked with small fibrous patches. Microscopically, these areas consisted of scar tissue containing a number of giant cells with an occasional lymphocyte. This rabbit developed arthritis, both knee joints being swollen and containing an excess of thick, glairy fluid which contained numerous pus cells; cultures of the joint fluid remained sterile.

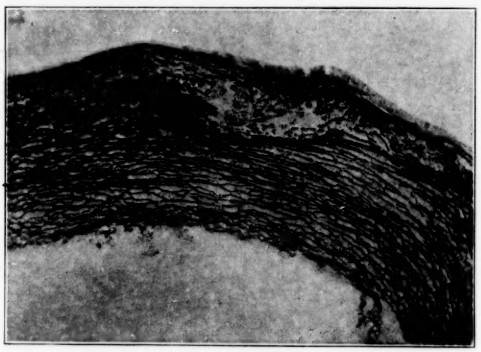

Fig. 2.—Aorta of rabbit mentioned in Figure 1.

CASE 59.—This patient, a man of 41, presents a marked picture of chronic deforming arthritis. He began to have rheumatic attacks at the age of 20, which recurred every few months until almost all the joints of his hands and feet, together with his knees and elbows, are swollen and deformed, with resultant loss of motion. One elbow joint is ankylosed, as shown in Figure 3. The dental radiograph shown in Figure 4 gives some idea of the condition in which we found the teeth. Cultures from these abscesses yielded streptococci which were remarkable for their virulence. Two strains were isolated, one producing green colonies on blood agar (59a), the other forming small gray colonies (59b). In massive doses both of these strains killed the rabbits over night. With moderate doses (8 c.c.) the rabbits died in forty-eight hours. The rabbit injected with the green strain showed a hemorrhage into the cusps of the mitral valve and numerous discrete nodules of lymphocytic infiltration in the heart muscle. The kidneys showed a number of bacterial emboli in the glomeruli and elsewhere, frequently surrounded by large areas of inflammatory reaction, containing both polymorphonuclears and lymphocytes. Streptococci producing green colonies on blood agar were recovered from the heart's blood and the kidney lesions, and 5 c.c. of the blood culture was injected into a second rabbit, which died in two days, showing only miliary abscesses throughout the cortices of the kidneys. The rabbit inoculated with the gray strain showed at necropsy numerous miliary abscesses in the kidneys, particularly in the medulla, where bacterial emboli were found in the capillaries, and perivascular aggregations of polymorphonuclears and lymphocytes occurred. The streptococcus was recovered from the kidney lesions, and 5 c.c. of this culture was injected into another rabbit, which lived. Two pigeons were next used, each receiving 5 c.c. of a broth culture into the pectoral muscles of the right side. The one receiving the green strain died over night, showing at necropsy a complete necrosis of the muscle on the injected side. Not a healthy fiber was found, nor was there any evidence of inflammatory reaction. The pigeon inoculated with the gray strain survived the experiment.

CASE 60.—This patient had pyorrhea alveolaris and an apical abscess associated with a severe and painful iritis which began to recede a few hours after extracting the tooth. Cultures from the root tip yielded another strain of *S. viridans* of high virulence, killing a rabbit over night. This rabbit showed a hemorrhage into one of the mitral cusps, and a number of whitish streaks in the myocardium just beneath the pericardium; microscopically these streaks were found to be lymphocytes gathered together in the cellular tissue under the pericardium. The streptococcus was recovered in pure culture and immediately injected in a smaller dose into another rabbit, which died in two days; the only lesions obtained in this rabbit were numerous miliary abscesses in the kidneys, especially the medulla.

We inoculated in all twenty-four rabbits. Of these, six lived. Five died showing no gross lesions, nor microscopic changes in heart or kidneys. One died of general sepsis and two of acute toxemia. Heart lesions occurred in five, kidney lesions in seven, aortic lesions in three, and joint lesions in two.

For purposes of comparison, thirteen rabbits were injected with streptococci obtained from ordinary saliva furnished by various people about the laboratory. Eight of these rabbits lived, two died after some time without demonstrable lesions, one showed myocarditis, another had a few very small aggregations of lymphocytes in the kidneys, while a third, which lived only twenty-four hours after inoculation, had an old adhesive peritonitis.

As controls we examined sixteen rabbits which had been inoculated with the fixed virus of rabies in the Pasteur Department of the Minnesota State Board of Health. These rabbits were older than ours, but came from the same lots and were kept under similar conditions. In none did we find any lesions comparable to those in our own rabbits, save for old scars in the kidneys of two.

Of the heart lesions obtained, the majority consisted of miliary nodules of small round cell infiltration in the myocardium. In two cases the lymphocytes were scattered diffusely through the heart muscle. Another animal, which died seventeen days after inoculation, showed a well marked chronic myocarditis in the gross. Microscopically, this heart showed large areas of scar tissue, some of which contained multinucleated giant

cells. This type of lesion was not found in any of the other rabbits injected with streptococci from dental abscesses, but in one of the rabbits inoculated with streptococci from normal saliva, we found a more marked myocarditis of the same type. This rabbit died ten days after injection, and showed an organizing adhesive pericarditis, while the heart muscle had a pale, blotchy appearance throughout. Microscopically this heart showed much of the muscle tissue to be necrotic, while large areas were completely replaced by fibrous tissue containing lymphocytes and plasma cells, scattered aggregations of endothelial cells, and numerous giant cells of the type noted above.

These heart lesions are particularly interesting when considered in relation with the work of Aschoff, Geipel, Bracht and Wächter, and others, on lesions of the myocardium in human rheumatism. These authors have all described submiliary nodules occurring in the heart muscle which they believe occur only in rheumatism. The nodules, generally called Aschoff-Geipel bodies, are described as occurring in the intermuscular tissues, especially about the vessels. They are composed of large round cells, which Aschoff believes are derived from the wandering connective tissue cells, arranged in a rosette about a vessel. These cells frequently form multinucleated giant cells, similar to those occurring in periosteal sarcomas. Scattered through the fibrous tissue, which is increased about the nodule, are lymphocytes and polymorphonuclears. Types of myocarditis closely resembling the Aschoff-Geipel type have been produced in rabbits by the experimental inoculation of streptococci by Bracht and Wächter,[4] Coombs,[5] and Leila Jackson.[6] The most recent work on this subject is by Thalhimer and Rothschild,[7] who found the bodies constantly present in cases of true rheumatism and chorea, but absent in cases of endocarditis due to *S. viridans*. They also produced focal myocardial lesions in rabbits by injecting them with *S. viridans*, but insist that these lesions are quite different from those occurring in human rheumatism, partly on the ground of differences in structure, notably the absence of a perivascular arrangement in rabbits, and partly on differences in the staining reaction of the cells with pyronin methyl green. They give one the impression that *S. viridans* infections, especially the ordinary type of subacute endocarditis, are quite distinct from true rheumatism.

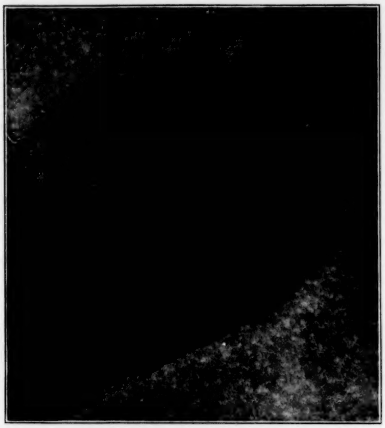

Fig. 3.—Roentgenogram of ankylosed elbow of patient, Case 59, in whom there was a general chronic deforming arthritis, with alveolar abscess as shown in Figure 4.

Fig. 4. — Dental roentgenogram showing apical abscesses in Case 59.

Endocardial lesions occurred but twice in our rabbits. These were animals which died very shortly after inoculation. In each case there was a well marked subendothelial hemorrhage in the mitral valves. Rosenow considers this condition to be the first stage in a developing endocarditis.

The lesions of the aorta which occurred in three of our rabbits were plainly visible to the naked eye, appearing as a series of pinhead sized elevations just above the aortic valve, giving the ascending portion of the arch a roughened appearance. Microscopically, these areas showed in the inner portion of the media an area in which there was a complete loss of continuity in the elastic tissue fibers, the ends of which appeared broken and twisted; this area contained necrotic material with a few lymphocytes. The overlying intima was thickened. Klotz[8] has shown that the aorta in rheumatism constantly presents characteristic lesions in the media. These lesions resemble somewhat the Aschoff-Geipel nodules in the heart muscle, and occur about the vasa vasorum in the outer part of the media and in the adventitia. The lesions which we have experimentally produced by mouth streptococci differ from those of human rheumatism in occurring in the inner portion of the media, and in being more extensive. It is possible that they are spontaneous, but the fact that we failed to find them in any of our controls suggests that they were produced by the organisms injected.

The kidney lesions obtained varied in degree from scattered masses of lymphocytes in the cortex to abscesses visible to the naked eye. The latter occurred in rabbits which developed an acute infection, dying two or three days after inoculation. It is noteworthy that the *Streptococcus viridans*, usually considered to be of mild virulence, can occasionally produce such acute infections, with a purulent exudate. These abscesses usually contained bacterial emboli, and usually occurred in the cortex, occasionally in the medulla. At times, emboli were found in the glomeruli without any surrounding inflammatory reaction. In several of our kidneys we found streaks of inflammatory reaction, consisting mostly of lymphocytes, radiating through the medulla, and apparently perivascular in position; such lesions have been described by LeCount and Jackson[9] as occurring in rabbits experimentally inoculated by them with streptococci.

We wish to point out the significance of the association of heart, kidney and arterial lesions in these

4. Bracht and Wächter: Deutsch. Arch. f. klin. Med., xcvi, 493.
5. Coombs, quoted by Thalhimer and Rothschild (see Note 7).
6. Jackson: Jour. Infect. Dis., xi, 243.
7. Thalhimer and Rothschild: Jour. Exper. Med., xix, 417.
8. Klotz: Trans. Assn. Am. Phys., 1912.
9. LeCount and Jackson: Jour. Infect. Dis., xv, 389.

rabbits. Such an association of diseases is frequently met in its last stages in clinical medicine. Klotz,[10] who has also obtained associated lesions of these organs in rabbits inoculated with various strains of *Streptococcus viridans,* suggests that this condition represents the end result of a previous rheumatic infection.

The absence of joint lesions in our rabbits was rather surprising. In the two cases which developed arthritis there was a thickening of the periarticular tissues of the knee joints, which contained an excess of thick cloudy fluid, in which there were pus cells. The animals died some time after inoculation and cultures were sterile.

Except in the cases specifically mentioned and from the kidney abscesses, we have not been able to recover our organisms from the infected animals, nor were we able to demonstrate any cocci in the microscopic preparations of our myocarditis cases, a fact also noted by Thalhimer and Rothschild, who suggest that these lesions are purely toxic in origin. Leila Jackson, however, found numerous organisms in the large round cells in the early stages of her experimental myocarditis.

To summarize, we have shown that streptococci of the viridans group are constantly present in peridental suppurative lesions. This is not surprising, since such streptococci are normally present in the saliva and on the buccal mucous membranes; we feel sure, however, that by our technic we have excluded contamination from this source. These streptococci are normally of low virulence, but are at times able to produce lesions of the heart, aorta, kidneys, and joints, some of which closely resemble the lesions of rheumatism; that they are potentially of high virulence is shown by the experiment in which they were grown in the anterior chamber of the eye. We cannot claim, from the evidence so far obtained, that these streptococci bear an etiologic relationship to dental abscesses and pyorrhea, but from the point of view of metastatic infections it is important to know that such organisms are constantly present in lesions presenting a large ulcerated surface, through which they may, and probably do, frequently pass into the deeper tissues and the blood stream.

10. Klotz: Canad. Pract., February, 1914.

Breast Feeding.—As a rule the infant should be fed from only one breast at a time. Only in those cases in which the milk is insufficient in quantity should both breasts be given at one time.—Isaac Abt, *Detroit Med. Jour.,* February, 1915.

A SIMPLIFIED TECHNIC FOR VAGINAL HYSTERECTOMY

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The following technic has been used by me in eighty-four cases of vaginal hysterectomy with one death. While the technic is largely a modification of other methods, I feel that the utilization of the good points of many operations for vaginal hysterectomy has made a simplified and advantageous method. The points I wish to emphasize are that the cervix is caught by a special clamp, thus saving the time sometimes used in sewing up the cervix, and the stumps are left sewed and not clamped. The method of sewing over and over the stumps of the broad ligaments is similar to the method I use in abdominal hysterectomy, and is so far as I know original. It has the advantage of obviating the necessity for leaving heavy clamps on the stumps, protruding from the vagina; and I have found that hemorrhage or oozing can be perfectly controlled by traction on the ends of the sutures which are left long and hang outside the vulva. Furthermore, it is superior to any method of tying off the stumps *en masse,* in that sutures placed in this manner cannot slip.

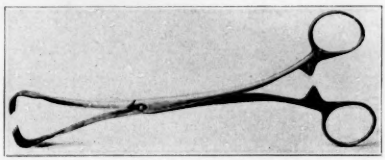

Fig. 1.—Forceps used to grasp the lips of the cervix.

Fig. 2.—Clamp placed on cervix; claw retractors delivering the uterus.

The steps in the method are as follows:

1. The anterior and posterior lips of the cervix are caught by a double pronged tenaculum. This tenaculum or clamp I have had especially made (Fig. 1). It serves the double purpose of making strong traction without tearing, and of sealing the lips of the cervix so as to prevent discharges from soiling the field of operation. These things I formerly accomplished by sewing the lips of the cervix together; but I have found this clamp just as effective and of course far more rapid of application (Fig. 2).

2. The incision is made, completely circumscribing the cervix.

3. A layer of gauze is placed over the end of the operator's index finger, and by traction with the clamp and using the finger as a dissector, the posterior culdesac is reached: the dissection is made down to the peritoneum. With a fresh piece of gauze, the dissection between the anterior wall of the cervix and the bladder is made in the same way. I rarely find it necessary to use a knife or a pair of scissors in entering the peritoneum anteriorly. By means of this blunt dissection by the use of gauze I have never injured the bladder or ureters (Fig. 3).

4. By the use of two claw retractors (recommended by Ochsner) applied alternately one above the other, the uterus is rapidly delivered anteriorly. The usual

Fig. 3.—Uterus delivered.

Fig. 4.—Uterus separated from broad ligament on the left side.

custom of delivering the uterus anteriorly serves the very good purpose of separating the ureters so that with reasonable care in the application of forceps there is no danger of including them in the bite of the forceps.

5. After the uterus is delivered, the left hand with the index finger extended is placed over the fundus of the uterus and is forced down through the peritoneum of the posterior culdesac, or else acts as a guide by the side of which the culdesac is opened with scissors through the posterior incision without danger of entering the rectum. In most cases the use of an instrument is unnecessary.

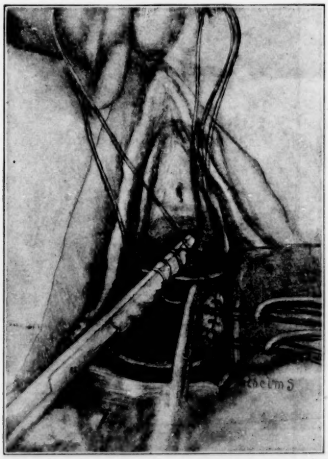

Fig. 5.—Over-and-over suture of the right broad ligament being made.

Fig. 6.—Both stumps sutured, ready for closure.

6. Clamps are now placed on the right broad ligament.

Usually two will suffice. The first clamp is placed on the broad ligament below, and the broad ligament

cut between it and the uterus before the second clamp is placed (Fig. 4).

7. After the broad ligament on the right side is severed, the uterus is rotated and the clamps are easily placed on the left broad ligament and the uterus cut away. In many cases the procedure to this point has

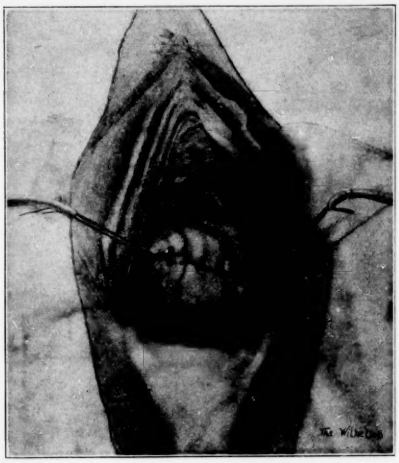

Fig. 7.—Closure completed.

not occupied more than three or four minutes. If it is necessary to remove tubes or ovaries, they may be included with the uterus in the second clamp.

8. With a double strand of No. 2 ten-day chromic catgut in a curved round needle, an over-and-over suture is made on one of the upper clamps; concluding, all the tissue enclosed in the clamp is withdrawn and the suture tied; all four ends are caught in a clamp: they should be at least 4 inches long. The lower clamp is next sutured in the same way and the ends of the catgut left long. After proceeding in the same way to sew over the opposite side, all the ends of the sutures are brought out and enclosed in one clamp for each side (Figs. 5 and 6).

9. The peritoneum is grasped in hemostats anteriorly and posteriorly and sutured in a running suture of catgut. The edges of the vaginal incision are next sutured. Openings are left at both ends of this incision through which the end of sutures on the respective broad ligaments are brought out, caught in a clamp and gauze wrapped around them. I have had only one case of hemorrhage following operation, and it was controlled by traction on these clamps. The clamps are removed at the end of twenty hours, and the ligatures are cut short (Fig. 7).

The fact that no clamps wrapped in gauze are left in the vagina as in many vaginal hysterectomies obviates the necessity of using a self-retaining catheter. The sutures sewed into the broad ligament cannot slip, and so control hemostasis quite as well as the clamps, beside saving the patient the great annoyance of having the clamps left in for so long a period, and also the danger of secondary hemorrhage at the time of removal of clamps.

IDIOPATHIC MEGACECUM

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In 1,742 roentgenographic examinations of the abdomen, the condition of idiopathic megacecum has been encountered three times. Eight additional cases of markedly enlarged cecums were found, all of which presented bands, kinks, or some condition distal to the cecum, suggesting that the dilatation was a secondary or resulting process. It is possible that in two of these, the obstruction was not significant enough as a cause of the enlarged cecum; but these are not included in the description. Of the three cases of idiopathic megacecum, the first, while operation was performed and no obstruction discovered, is also not presented. It came under observation over two years ago, and the significance of it was not thought of. More than that, the records and the Roentgen examination of this case were not complete enough for full study.

Since the classical description by Hirschsprung of congenital idiopathic dilatation of the colon in 1886, many cases of the disorder have been studied. The bibliography presented by Finney in 1908 mentions 204 articles describing almost as many cases of Hirschsprung's disease. Since then more have been added. A perusal of this literature fails to disclose instances of dilated cecums alone. In several there are suggestions, but these are not concrete to the condition. It is probable, however, that instances of idiopathic megacecum have been described with Hirschsprung's disease. Judging from the descriptions of Perry in 1825, down to the present day, congenital idiopathic dilatation of the colon has been met

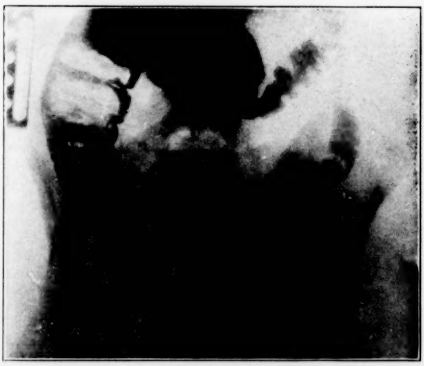

Fig. 1.—Case 1: mark on right side of patient. Note enlarged cecum involving about one-third of transverse colon, confirmed at operation. No obstruction at distal point of dilatation, but hypertrophied and thickened wall observed.

mostly in infancy and childhood, and in the pseudomegacolons occurring in adult life (Hirschsprung's classification) the condition involves the lower colon, or the entire organ and less markedly the beginning (cecum). The condition herewith presented involved only the cecum, and not any other portion of the intestine above or below it.

As to whether true idiopathic megacecum is congenital or acquired it is not possible for me to say. The patients were in middle age, 43 and 59 years, respectively, and unless one had examined these early in life, or instances are noted in infancy, the question must remain open. I am strongly inclined to the belief that they are acquired, the beginning taking place about the time of puberty, but not having any

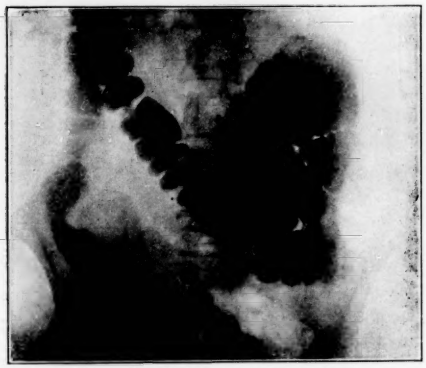

Fig. 2.—Case 2: mark on right side of patient. Note enlarged cecum involving about one-eighth of transverse colon, confirmed at operation. No obstruction at distal point of dilatation, but hypertrophied and thickened wall observed.

connection with the sexual organs because of it; and further, that it takes years for the condition to become well established, it being in this sense pseudocongenital. As to the cause, it is at present my opinion that a bacterial process represented in an intestinal toxemia of a chronic type figures mainly. Exactly what this infection is or the food-bacterial toxins are, or may be, I am unable to say. In coming to this conclusion on the basis of the two cases presented we can rule out abnormally long mesentery with secondary torsion of the cecum; atresia or obstruction of the colon from any cause distal to the cecum, both within and without the intestine; chronic colitis, which exists but probably is secondary; neuromuscular defect in the one section, because the symptoms were easily handled medically and a moderate reduction in the dilatation accomplished; changes in the sympathetics of the cecum for the same reasons, and incomplete invagination or valve formation.

The clinical picture of the condition is obscure in ways. The definite ones are a moderate constipation in which the bowels move every second or third day, but, even if they move every day, a relative constipation exists, the definite relief of all symptoms for a day or two after active purgative, and then their return after that, taking from four to seven days; a slight degree of distention or fulness of the right side of the abdomen, noted particularly when the abdomen is thin and the walls relaxed, and the percussion of a large cecum markedly tympanitic; the clinical picture of a person who has intestinal toxemia to a marked degree, and the laboratory findings in the examination of the stools and urine confirming it; postmeal gastric distress; loss of weight; nervous breakdown and history of sanatorium treatments for this; and the noting of the large cecum by roentgenoscopy, the dilatation involving the entire section to the splenic flexure and a distance of the splenic portion of the transverse, there being no distinct obstruction or actual delay in transit at the distal point of the dilatation. It may be added that at operation, a generally dilated and slightly hypertrophic cecum without any distal obstructive condition is encountered.

Although no surgery was done after the condition was noted, the cases became free of symptoms on medical treatment. Case 1 was treated for three weeks in bed, the right abdomen massaged and treated with sinusoidal current daily, and the lower end of the bed raised.

Case 2 was treated while about. Both the patients had abdominal massage for weeks; slept nights with the foot of the bed raised; were made to rest an hour after meals; and were given small supplemental meals between the main ones and before retiring; a high fat and carbohydrate diet, this roughened with prunes sweetened with milk-sugar or honey, bran biscuits and agar-agar; an evening dose of petrolatum (a tablespoonful), and general and nerve tonics.

21 West Seventy-Fourth Street.

AN UNUSUAL CLINICAL VARIETY OF LICHEN PLANUS

(LICHEN PLANUS HYPERTROPHICUS RETIFORMIS)

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Hypertrophic forms of lichen planus are comparatively common. The most frequent type is one which might be designated as "lichen planus hypertrophicus circumscriptus," and is characterized by the occurrence of circular, oval or elongated patches, somewhat ele-

Fig. 1.—Lichen planus hypertrophicus retiformis (Case 1), showing distribution of lesions on thigh.

vated, with grayish, scaly tops and sharply defined, indurated borders. The lesions are generally reddish or purplish, always dry, and at times intensely itchy. By coalescence of the primary patches, large infiltrated areas may be produced. The sites of predilection are the legs and thighs, although the upper limbs and the trunk may be involved.

Other types, lichen planus verrucosus and lichen planus annularis hypertrophicus, are encountered less frequently, but present equally typical clinical pictures. In all three the histologic changes are characteristic and distinctive.

Recently I have had under observation two cases of lichen planus in which the configuration of the lesions was unusual.

CASE 1.—The first case occurred in a married man of 27, a draftsman by profession, referred to me by Dr. C. B. Hopkins of Kansas City. The disorder had been present for almost a year, and had commenced as an itchy, papular eruption on the outer surface of the left thigh. A portion of the involved area had been burned quite severely, a few months before, and the patient at first ascribed the new skin lesions to irritation of the old cicatrix; but when the eruption extended to the adjoining healthy skin he became alarmed, and consulted Dr. Hopkins.

Fig. 2.—Lichen planus hypertrophicus retiformis (Case 2), showing distribution of lesions on right hand and wrist.

The disease was confined to the outer surface of the thigh, and consisted of two rough, purplish, scaly patches, the smaller of which was about 9 cm., and the larger 18 cm. in diameter. There were a few satellite lesions in the neighborhood of the larger plaque, but none of them bore any resemblance to the ordinary papules of lichen planus. The patches consisted of closely aggregated groups of large, flat or oval topped, scaly papules, angular in outline, and hard and resistant to the touch. The most striking feature, however, was the arrangement of these nodules. Many of them were connected not only to each other but also to the outlying satellite lesions by bridge-like bands of diseased tissue. The integument enclosed within the meshes thus formed was normal in texture, and showed no signs of inflammation or atrophy. The impression given was that of a heavy piece of knotted embroidery drawn tightly over the skin.

Fig. 4.—Lichen planus hypertrophicus retiformis (Case 2), from margin of plaque on right hand (Leitz, No. 3 obj., No. 4 eyepiece, 18 cm. bellows extension).

For laboratory purposes two small pieces of tissue were excised, one from the tip of a nodule and one from near the middle of an elevated connecting band. Both showed the typical histologic structure of lichen planus hypertrophicus.

While the case was apparently a unique one, I thought the peculiar configuration of the eruption was probably due to the preceding injury of the skin, and filed the case history without giving the matter much consideration.

CASE 2.—In September, 1914, however, a more striking example of the condition came under my care. The patient was a Swedish shoemaker, a married man of 63, referred to me by Dr. C. A. Federman of Kansas City. The lesions were confined to the wrists and the backs of the hands, and had been present three months. They had commenced as small, dry, red, intensely itchy papules, which had gradually increased in size until they had reached their present volume.

Fig. 3.—Lichen planus hypertrophicus retiformis (Case 2), showing distribution of lesions on left hand and wrist.

On examination the patient was found to be a slender but well-nourished man, nervous and easily agitated, but apparently in good health. There were some suspicious looking pearly-white patches on the inner surfaces of the cheeks, at the interdental lines, but the skin on parts other than the hands and wrists was normal. Scattered irregularly over the anterior surfaces of the wrists were numerous typical lichen planus papules and a few large, purplish, scaly nodules. The major portion of the eruption was confined, however, to the backs of the hands. The lesions were flat topped, scaly papules and plaques, with rounded or angular bases, and varied from 0.1 to 1.0 cm. in diameter. Many of them were connected with neighboring lesions at one or more points, either by bands of thickened, reddened skin or elevated, horny ridges, and the mosaic-like appearance which resulted was quite striking. The skin in the interstices was unchanged.

For microscopic study, two pieces of tissue were excised by means of a medium-sized cutaneous punch, one from the center of a small but well-defined lesion on the back of the left wrist, the other from the margin of a large plaque on the dorsum of the right hand. The specimen from the wrist proved to be of unusual interest. In addition to the sharply limited cellular infiltration in the papillary and subpapillary regions, slight acanthosis, with lateral lengthening of the prickle cells, and thickening and condensation of the horny layer which are commonly found in lichen planus, there were four well-preserved coil gland ducts emerging from the derma at one point near the center of the lesion, and a fifth penetrated the epidermis only a few microns away.

The second specimen showed only the usual changes occurring in lichen planus hypertrophicus.

Treatment.—In both cases marked benefit followed the intramuscular administration of mercury salicylate (mercury salicylate, 2.0, anesthesin, 2.0, lanolin, 4.0, olive oil, 30.0) in olive oil, a mixture which is as efficacious in lichen planus as it is in syphilis. Locally, a calamine lotion with Duhring's compound tincture of coal tar was employed during the daytime, and an ointment containing ammoniated mercury, phenol and menthol at night.

New Lathrop Building.

Fig. 5.—Lichen planus hypertrophicus retiformis (Case 2), from lesion on left wrist (Leitz, No. 3 obj., No. 4 ocular, 18 cm. bellows extension).

A CASE OF INTUSSUSCEPTION CAUSED BY AN INVERTED MECKEL'S DIVERTICULUM

CHARLES R. HANCOCK, M.D.
Adjunct Professor of Surgery, New York Polyclinic Hospital and Medical School
NEW YORK

History.—J. P., boy aged 2 years, was seen for the first time, Oct. 28, 1914. The child had always been in delicate health, and during the first year of life suffered much with diarrhea. He had had bronchitis most of his life. The mother lost a boy from intussusception at the age of 10 years.

Forty hours before the child was seen by me he was taken with severe pain in the abdomen with vomiting. The family physician was called, and he gave him 1 dram of almond oil and several enemas without result. The child soon began to have bloody stools with mucus.

On admission to the Polyclinic Hospital, forty hours after the beginning of the attack, his temperature was 103 F., and pulse 160. He had all the symptoms of shock. The abdomen was distended and very rigid, especially over the left side. No tumor could be felt, and nothing could be detected by rectal examination with the finger.

A roentgenogram was taken by Professor Quimby, after first allowing 1½ ounces of barium sulphate, with 20 grains of powdered acacia mixed with 4 ounces of warm water, to flow into the rectum by means of a rectal tube. This located the lesion, and operation was performed at once under ether.

Operation.—A longitudinal incision, 3 inches in length, 2 inches from the median line, and with its center corresponding to the umbilicus, was made through the left rectus. When the peritoneum was opened, several ounces of straw-colored fluid escaped from the wound. The invagination, which was about 10 inches in length, was withdrawn from the abdomen, and wrapped in large warm pads. The bowel was then steadily reduced by gentle traction from above and pressure from below. On its reduction it was found that part of the ileum, the cecum, and part of the transverse colon had been intussuscepted down to the sigmoid. A soft tumor could be felt through the intestinal walls in the lumen of the bowel fixed to the wall of the ileum, opposite its mesenteric attachment, and about 12 inches from the cecum. At the site of attachment a dimple was observed, and this suggested that the tumor was an inverted Meckel's diverticulum, which had formed the apex of the intussusception.

Intussusception caused by an inverted Meckel's diverticulum.

The diverticulum, which was about the size of the ileum and 2½ inches in length, was pushed into its normal position without incision of the bowel. It was then excised, and the intestinal opening was closed longitudinally by two continuous sutures of fine Pagenstecher, one through all of the coats, the other Lembert's suture.

The patient made a good recovery, and left the hospital on the eighteenth day after operation.

224 West Fifty-Second Street.

Skimmed Milk and Foot and Mouth Disease.—L. Whitney Watkins of Manchester, Mich., official appraiser of cattle destroyed on account of foot and mouth disease, advances the theory that 80 per cent. of all foot and mouth disease in that state is caused by skimmed milk from the creameries which has been taken back to the farms for feeding to stock. He believes that most of the tuberculosis among livestock is transmitted in this way. He advocates the passage of a bill before the Michigan legislature requiring pasteurization of waste products of creameries.

New Instruments and Suggestions

INTUBATION APPARATUS AND TUBES FOR TREATMENT OF CHRONIC STENOSIS OF THE LARYNX

HENRY LOWNDES LYNAH, M.D., NEW YORK

An endeavor was made in the construction of this speculum to follow as closely as possible the mechanism of the bivalve vaginal speculum.

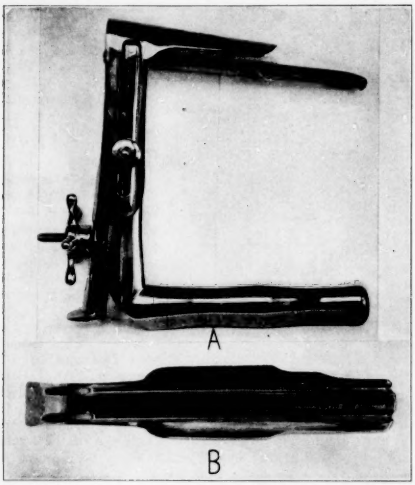


Fig. 1.—*A*, intubation speculum, showing spatula for children; *B*, adult spatula tongue depressor, lateral view, showing double light carrier.

The intubation speculum (Fig. 1 *A*) is made with an adjustable "duck bill" tooth plate. The upper blade can be raised or lowered to accommodate the size of the mouth in which it is to be used, while the lower blade is nothing more than a wide tongue depressor.

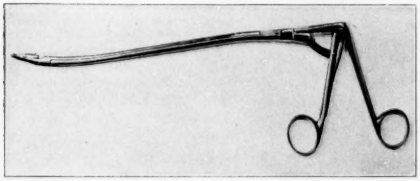


Fig. 2.—The introducer-extractor.

The upper blade is made of brass in order to allow for leverage and avoid fracturing the incisor teeth, while the lower blade, being almost flat, is made of steel to avoid bending.

The upper blade is reflected over the side of the handle of the speculum and carried downward and inward, and is reenforced by a steel plate.

The arm of the lever is slotted and attached to the side of the handle by the adjustable screw lock.

In the lower portion which winds about the handle there is also a slot through which passes a fixed post threaded for the swivel wheel which not only when closing makes the tooth plate describe an arc of a circle in opening but at the same time permanently locks the same so that the mouth cannot be closed.

The spatulas are made interchangeable so that an infant or adult spatula (Fig. 1 *B*) may be readily attached to the universal handle. The spatulas also have double light carriers or a light suction carrier for those who wish to use suction. The tubes for the double lights make a railroad track which keeps the tube on introduction in the median line.

The introducer-extractor (Fig. 2) is made with an upward tilt so that the tube engages the larynx easily. Obturators are dispensed with, for the obturator is necessary only when intubation is performed at a right angle to the larynx, that is, in the "blind," or indirect method.

The dilating tubes are of "cigar shape" and dilate anteroposteriorly as well as laterally and are made with and without built-up heads. They increase 1 mm. in size over the O'Dwyer tubes up to 5 mm., made in five sizes.

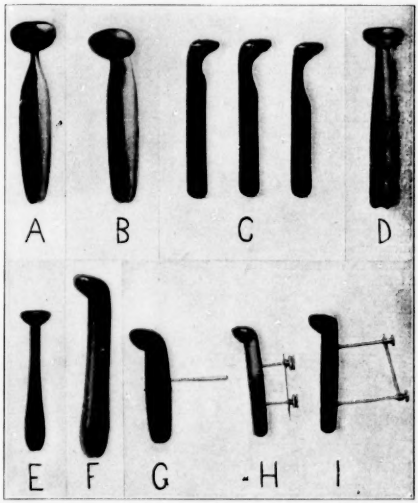


Fig. 3.—*A*, narrow neck dilating tube, lateral view; *B*, narrow neck dilating tube, anteroposterior view; *C*, abductor tubes; *D*, low tracheal dilating tube; *E*, non-cough-out tube, lateral view; *F*, non-cough-out tube, anteroposterior view; *G*, *H*, *I*, post and bridge tubes, all dilating.

The narrow neck tubes (Fig. 3 *A* and *B*) have a very small lumen and are made with a dilating body and built-up head. The lumen is too small to allow for free passage of air; therefore I have discarded their use and resorted to a more satisfactory method.

The abductor tubes (Fig. 3 *C*) are made in three sizes, with wide lateral heads but short in the anteroposterior diameter. These tubes have the posterior portion of the lumen and head cut out to allow for play of the abductors and arytenoid cartilages. By the use of these tubes reeducation of the muscle is possible and the spasm of the abductors can be overcome.

The dilating tracheal tubes (Fig. 3 *D*) are used when there is a low tracheal fistula with hypertrophy of the posterior tracheal wall. They are made in three sizes, 1 to 3 mm. increase in diameter.

The non-cough-up tubes (Fig. 3 *E* and *F*) have a low bulbous extremity which holds in the trachea. I have been using these tubes for the past four years, and so far in over three hundred cough-up cases not a single one has been coughed out after introduction. These tubes have put a stop to much of the anxiety which accompanies intubation.

The post tube (Fig. 3 *G*) has a device which can be screwed into the tube through the tracheal fistula. The tube is first introduced and scratched through the wound so that the scratch mark corresponds to the tracheal fistula, then it is removed and a thread hole bored to accommodate the post.

The bridge tube (Fig. 3 *H* and *I*) I have employed after laryngofissure. The tube is introduced through the mouth, and when in position the bridge is attached to it. Strips of adhesive plaster cross this bridge and are strapped tightly to the sides of the neck to make posterior pressure, so that the anterior fissure would heal primarily. I have discarded their use as I have resorted to dilatation only during the past five years.

Low tracheal and bronchial tubes are used only in low tracheal and bronchial diphtheria. I have been using them for the past year and so far have had gratifying results.

The tunnelled sound with obturator is employed in tracheal cannula cases when it is necessary to dilate the larynx above the cannula. The sound is tunnelled so that the patient can get air during the process of dilatation. These are made from urethral sounds. After dilatation has been accomplished this tunnelled sound is passed, the tube attached to the obturator and intubation performed. All of these tubes and apparatus are made by George Ermold of New York.

24 West Fifty-Ninth Street.

NEW INSTRUMENT FOR THE REMOVAL OF ADENOIDS

MARVIN MCTYEIRE CULLOM, A.B., M.D., NASHVILLE, TENN.
Fellow of the American College of Surgeons

The best instrument for the removal of adenoids is the curet. It has two drawbacks: the liability of losing the growth, and the possibility of stripping down the mucous

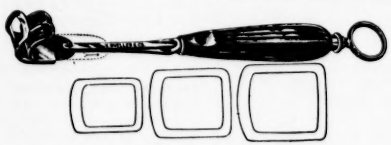


Fig. 1.—Instrument for the removal of adenoids.

membrane on the back wall of the pharynx. Aside from these defects, no instrument has yet been devised which is superior to it.

I have attempted to devise an instrument which will preserve the good qualities of the curet and at the same time overcome these two difficulties.

The instrument presented has all the features of the curet. In addition it has a flexible blade which cuts the growth at the back, and a movable cage over the fenestrum of the curet which permits the adenoid to project through the instrument and enables it to get down to the very base of the growth. The flexible blade is worked by an arm running through the handle to a thumb ring. In removing the growth the instrument is thrust forward until it touches the vomer; it is then pushed down until it settles snugly around the growth, the flexible knife is thrust home with the thumb, and the adenoid is removed with a free sweep just as with a curet.

The flexible knife does not cut entirely through the growth, but the final severance is made with the sharp edge of the curet.

The growth usually comes away *en masse*. The finger is then introduced to make sure that the removal is complete. It can be used as an ordinary curet by drawing back the blade.

In the first few operations in which I used the instrument, I was rather startled by the size of the growth removed. It

Fig. 2.—Method of use.

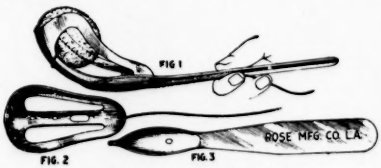
was because I was not accustomed to seeing the entire adenoid mass in one piece.

214 Hitchcock Building.

AN IMPROVED PESSARY AND TAMPON HOLDER

WORTH NORTON, M.D., LOS ANGELES

As will be seen from the illustration, which is about three-eighths actual size, this pessary is simple in construction and practical in application. Figure 1 shows the instrument ready for insertion, while Figures 2 and 3 picture the pessary and introducer separately. Its usefulness as a support is due to the fact that it will remain in place and hold the cervix in its normal position. It is worn without discomfort as its shape conforms to that of the vagina. The pessary is constructed of aluminum and is light, indestructible, and can be sterilized by boiling. The fenestrations laterally permit the entrance of the soft parts, doubly securing the instrument in position. As any support is needed only when the patient is on her feet, the pessary can easily be removed at bedtime and reinserted in the morning. A slightly longer and wider pessary is required for a badly lacerated case, while an atrophic, shortened vagina is best



Improved pessary and tampon holder.

served by a shorter but slightly wider pessary. After being instructed by the physician, the patient can readily remove and reinsert the pessary.

This instrument has given good results in retroversion, prolapse, cystocele and general pelvic relaxation.

Medicated cotton secured within the pessary serves as a method of prolonged application to the cervix and adjacent tissues.

507 Bumiller Building.

AN ELECTRIC-HEATED WATER-JACKETED INFANT INCUBATOR AND BED

FOR USE IN THE CARE OF PREMATURE AND POORLY NOURISHED INFANTS

JULIUS H. HESS, M.D., CHICAGO
Associate Professor and Head of the Department of Pediatrics, University of Illinois, College of Medicine

To meet the requirements for the safe application of artificial heat to premature and weak infants, three conditions must be observed:

1. The heat must be of a fairly constant temperature, with a safe maximum.
2. A constant supply of fresh air must be available.
3. A normal average of humidity must be maintained.

I have attempted to meet these requirements by the construction of an electric-heated water-jacketed bed.

The bed shown in Figure 1 is constructed of heavy sheet copper with inside measurements as follows: length 30 inches, width 17 inches, and depth 13 inches. The floor and sides are surrounded by a water jacket 1 inch thick. The side walls, furthermore, are covered by a layer of cork one-fourth inch thick, which practically prevents heat radiation from the external surface, limiting heat radiation to the inner surface of the jacket, that is, sides and floor. On the left hand side a right angle hot water thermometer is inserted directly into the water chamber, which at all times registers the temperature of the water surrounding the bed. On the same side a water gage with faucet registers the height of the water and is also used for emptying the jacket during transportation. The jacket is filled through the inlet in the upper rim.

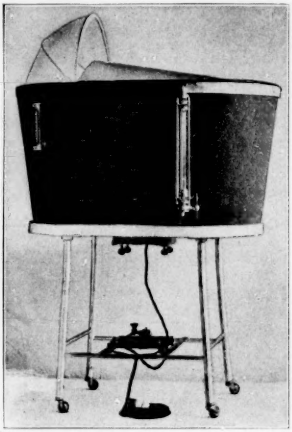


Fig. 1.—Bed complete.

In the floor of the water jacket a one-quarter inch pipe is inserted to carry off any water which might flow into the bed in case of a leak, thus avoiding all danger of flooding the crib in event of an accident to the water jacket.

The bed proper rests on a standard (Fig. 2) 22 inches in height with a metal top surrounded by a metal rim 2 inches deep, and this is lined with asbestos. The standard is supplied with ball-bearing casters, allowing of easy transportation from one ward to another if desirable.

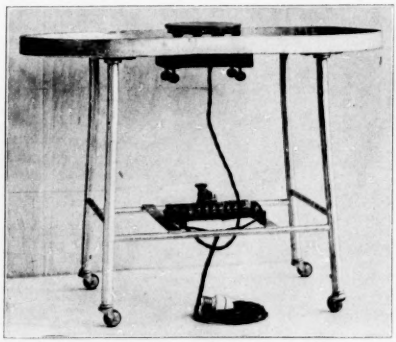


Fig. 2.—Standard for bed, with heating apparatus and rheostat.

The electric heating apparatus (Fig. 2, Simplex Electric Heating Company) is so constructed as to operate on either direct or alternating current, and consists of:

1. A stove with a 6-inch surface specially constructed to carry a maximum capacity of 300 watts (ordinary 6-inch places have a capacity approximating 440 watts), which makes it impossible to heat the water above 155, at a room temperature of 75 F. This stove rests on a drop in the metal top of the standard, and can be raised or lowered by the four thumb screws seen in Figure 2, by which means the stove can be brought into direct contact with the floor of the water jacket. This is essential to the proper heating of the water and the prevention of overheating of the stove.

2. A rheostat fastened to the lower part of the standard (Fig. 2) with seven contacts; six of them are graduated to take current varying from 25 watts on Contact 1 to 300 watts on Contact 6. The seventh contact shuts off the current.

For the protection of very frail infants, a partial cover (Figs. 1 and 3) for the tub, 21½ inches in length, is provided to shield them more completely from outside air currents. It is provided with a thermometer so that the temperature within the tub can be ascertained by the nurse at all times. Further, a wire frame covered by a removable linen cover is provided in the form of a hood (Figs. 1 and 3). This can be set over the open space not covered by the metal lid in case of great air currents and extremely cold nights. The hood raises the temperature within the bed on an average of from 5 to 10 degrees F., depending on the room temperature and current used, but does not interfere with perfect ventilation.

The baby basket (Fig. 3), which is of the type used in many obstetric wards, is 28 inches by 14 inches and has a depth of 8½ inches, which prevents any danger of the infant's extremities coming into contact with the walls of the heated water jacket. The basket rests on a standard raising it 2 inches above the floor of the bed, allowing a free circulation of air all around it. A simple linen cover is provided which encircles the basket, adding to its cleanliness and appearance. Excessive drying of the air is prevented by the constant circulation through the bed of the free air of the room and by evaporation from a flat basin, 9 by 11 inches, containing baked porous clay (as used in water filters) over which water is poured to allow of evaporation. Varying with the degrees of temperature to be maintained within the bed, it is necessary once daily to supply from 8 to 16 ounces of water to replace that lost through evaporation.

The construction of the bed is such that it is intended for use in an ordinary ward or room, giving the infant the advantage of the most perfect room ventilation. The free currents of air within the bed can be demonstrated by allowing smoke to pass over the surface of the bed, which results in dropping of the smoke in the center to near the floor, passing over it to the lateral walls and up the sides into the room.

We require inspection and charting of the temperature registered by the thermometer in the lid (if the latter is in use), or one placed within the basket if the lid is not in use, at 6, 12, 6 and 12 o'clock, as the most likely times for maximum temperature changes in the ward temperature.

As the only variable factor in the maintenance of temperature within the bed is that of the changes in temperature of the surrounding room, I have made numerous calculations

at different room temperatures and have tabulated them on a card at the head of the bed, so that the attendant need only know (1) the temperature desired on the inside of the bed, and (2) the room temperature, in order that by looking at her chart she may ascertain the number of the contact point at which to place the rheostat.

The advantages offered by this apparatus are:

1. Safety. The maximum temperature to which the water can be heated with this special stove is about 155 F., with a room temperature of 75 F., and rheostat on Contact 6,

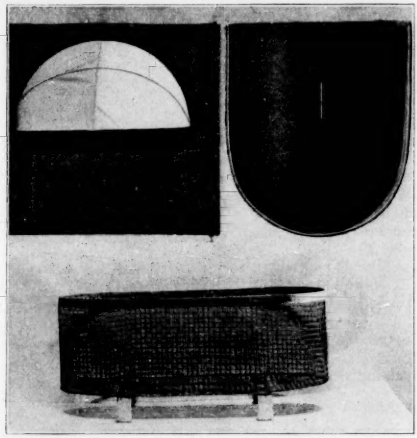


Fig. 3.—Hood, cover (with thermometer) and baby basket.

this giving a maximum temperature within the bed of 110 F., with the lid and canopy on.

2. Economy of construction, operation, and most important, the elimination of the trained attendant.

3. Simplicity of operation. It needs practically no attention unless there are extreme ranges of temperature in the ward, since the cork insulation prevents radiation from the outer surface of the bed, and the heater holds the water at a constant temperature. We rarely find it necessary to change the rheostat more than twice daily.

4. Perfect control of ventilation of air within the bed, in the general wards of the hospital.

5. Humidity which is little lower than that of the surrounding air (hygrometer, Taylor Instrument Company).

I have had three of the infant incubator beds in use in the wards of Michael Reese Hospital for periods varying from one to five months.

5514 Indiana Avenue.

NICHROME AS A SUBSTITUTE FOR PLATINUM WIRE IN BACTERIOLOGIC INOCULATORS

M. W. LYON, JR., PH.D., WASHINGTON, D. C.

At the beginning of the school year last October, there was a shortage of platinum wire in the bacteriologic laboratory, Medical School, Howard University. At the suggestion of Dr. H. C. Scurlock I obtained some No. 20 nichrome wire from Eimer and Amend and have used it exclusively in my classes in bacteriology during the past semester. It has proved so serviceable and so inexpensive as compared to platinum that it seems desirable to call attention to it. Its use in this connection does not appear to be mentioned in the usual text-books and laboratory manuals and I have seen no reference to it in recent literature. Nichrome wire is so common, however, and its desirable properties so obvious that undoubtedly others have employed it before now. This wire is an alloy of nickel and chromium and is used primarily for its electrical resistance in rheostats; it has a relatively high melting point and is not easily corroded. The inoculators made from this wire have been in almost daily use for the past four months and show practically no signs of wear. The rather heavy wire selected and the inherent properties of the alloy made wonderfully stiff inoculators, with the result that there is no attempt on the part of students to make loops of straight inoculators or to straighten out those with loops, as happens with the usual small-sized platinum wire. A half pound of the wire was originally purchased and nearly 100 generously long inoculators were made and there is no obvious diminution in the amount of wire remaining on the spool which cost $2.65.

I have found aluminum wire handles to be much superior to those of glass. The No. 8 wire which I have employed is fairly satisfactory, but a heavier wire would have been better. To fasten in the nichrome wire a partial vertical split is made in the end of the aluminum wire with an ordinary bracket saw, extending about three-quarters through the wire at the end and diminishing in depth till flush with the surface about half or three-quarters of an inch back from the end. The edges of the split are then hammered over the inserted nichrome wire. The partial splitting of the wire gives a firmer support for the nichrome wire than a complete splitting.

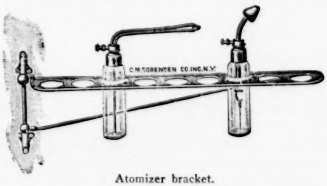
Howard University.

A NEW ATOMIZER BRACKET

IRVING WILSON VOORHEES, M.D., NEW YORK

The device shown in the accompanying illustration is so simple that I hesitate to say a word in explanation of it. The C. M. Sorensen Company, New York, made the first one from plans described by me more than one year ago. Since then there has been quite a demand for it; hence it seems worthy of a wider notice than it has hitherto received.

DeVilbiss atomizers are commonly used by specialists and have given good satisfaction. Unfortunately, however, the bottle stands hold at most only six atomizers, which are



Atomizer bracket.

always in the way and are frequently upset. That explains the origin of this "swinging spray bracket." The original model was planned to hold eight bottles, and is quite large enough for most specialists. It can now be had to carry six, nine or twelve atomizers, or in fact can be constructed to order for any desired number. A desirable feature of the bracket is that it can be screwed to the wall or table so as to swing out free from its attachments. When not in use it can be pushed aside. The price averages fifty cents per hole, and is calculated according to the number of holes.

14 Central Park West.

Cold as a Tonic.—The human body has a wonderful power of adapting itself to changes in temperature, but the power must be educated by use. Cold is dangerous when it comes as a surprise. Make a friend of it and it is one of the best tonics you can have.—New York *Health Almanac*, 1915.

Special Article

PRACTICAL PHARMACOLOGY *

(Continued from page 995)

XII

ANTISEPTICS AND DISINFECTANTS

Antiseptics have long been used for the preservation of the human body after death and for other purposes. Of course the nature of their action was not understood in early times. The modern use of antiseptics and disinfectants in surgery dates from their employment by Lister less than thirty-five years ago.

Lister's brilliant results aroused the hope that all pathologic micro-organisms in the human body might be killed, especially those in the blood. Though this hope has not been fulfilled it has been fostered by manfacturers of proprietary preparations, and there are few branches of the materia medica in which there have been more misunderstanding and deliberate misrepresentation.

The subject of antisepsis and disinfection concerns the public health and general welfare deeply; therefore the physician should understand the general principles involved. Little more than a presentation of certain principles and a brief discussion of the more commonly employed antiseptics and disinfectants[1] will be attempted here.

It is obvious that all disinfectants will prevent the growth of bacteria, but for some reason the fact is often overlooked that an antiseptic does not prevent the subsequent growth of the micro-organisms when the necessary conditions have changed.

The importance of this lies in the fact that antiseptics are often recommended for use where disinfectants alone are of value. It is obviously useless to employ an antiseptic in washing an infant's nursing-bottle and its fittings, because an antiseptic wash is no better than water for removing bacteria, and unless they are removed or destroyed they will multiply when the bottle is filled with milk, which is an excellent culture medium.

Anything that renders the conditions unsuitable for the growth of bacteria will act as an antiseptic, but a chemical substance, to be actively disinfectant, must penetrate the bacterial cell and act on its protoplasm. Some of the more intensely active antiseptics have been mistaken for disinfectants when tested carelessly, because enough of the antiseptics were transferred to the culture mediums with the bacteria to prevent further growth, leading to the supposition that the bacteria had been killed.

The activity of disinfectants is altered by so many different conditions that it is not sufficient to know the actual or relative degree of activity of a given agent when it is used in a test-tube experiment under the most favorable conditions; it is necessary to know also the approximate activity under the conditions in which it is to be used.

Different organisms manifest wide differences in their resistance to the action of disinfectants, and among the factors which influence the destructive activity of a disinfectant for a given organism are temperature, the presence of organic matter, and the manner of cultivation of the organism. It is obvious that we cannot do more than approximately determine the activity of any disinfectant in a given condition, unless it has been tested with reference to those conditions; but the standardization of a disinfectant affords an approximate indication of its value.

Of the numerous methods proposed for standardizing disinfectants, the one known as the "Hygienic Laboratory phenol coefficient"[2] has been adopted as the basis for purchasing disinfectants by the United States government and is recognized by the Council on Pharmacy and Chemistry. Stated briefly, this method consists in comparing the activity of the agent to be tested with that of phenol under conditions which seem best calculated to indicate its usefulness.

For convenience of discussion, we shall classify the antiseptics and disinfectants arbitrarily as derivatives of benzene, urinary disinfectants and antiseptics, and general disinfectants and antiseptics. The discussion cannot be either systematic or comprehensive, but it is intended to call the physician's attention to the dependable resources at his command for internal use, and for such disinfection as the general practitioner may be called on to conduct in emergencies. Many of the derivatives of benzene may be used for general disinfection, and some of those classified as general disinfectants may be used internally.

DERIVATIVES OF BENZENE

Benzene (C_6H_6) is not actively disinfectant, but phenol, which results from the substitution of an OH for an H of benzene, is sufficiently active to be used as the standard for comparison of disinfectants, though it is far from being the most active even of this group.

The toxicity of phenol (carbolic acid) lessens its field of usefulness, but the introduction of certain molecular groups into the phenol molecule lessens its toxicity without diminishing its disinfectant action. Many compounds formed in this way are now used.

Phenol combines with protein and precipitates it from solution. When applied to the skin, phenol forms a white eschar by precipitating albumin. It does not form a stable combination, and it may be removed by washing with alcohol or glycerin, in which phenol is very soluble.

Phenol ointment or oil is not actively disinfectant, because the phenol is more soluble in fat than in the bacterial cell and does not penetrate the latter. It is anesthetic, however, because the fat penetrates the skin and permits the phenol to come in contact with the sensory nerves.

The application of pure phenol or concentrated aqueous solutions to the skin causes pain followed by anesthesia, but the use of dilute solutions is not attended with severe pain. Oily solutions are preferable to aqueous when anesthesia is desired, but the aqueous are sometimes applied to infected superficial wounds for their antiseptic action. The water evaporates, requiring frequent renewal of the solution, and this may lead to gangrene even when dilute solutions

* This is the twelfth of a series of articles on useful drugs—on practical pharmacology for the general practitioner. As soon as completed, these articles, elaborated by additional subjects, will be published in book form.

1. There has been so much confusion regarding the use of the terms "antiseptic," "disinfectant" and "deodorant," that it may be permissible to define these terms briefly. A disinfectant is an agent that destroys micro-organisms. An antiseptic prevents the growth of micro-organisms so long as certain conditions are maintained. Deodorants absorb or destroy odors: they are not necessarily antiseptic or disinfectant.

2. Hygienic Laboratory Bulletin 82, April, 1912, is devoted to a discussion of this method and of the value of a large number of disinfectants which are advertised widely.

V. 19

are applied to the extremities in which the circulation is poor, as it is frequently after injuries; it is better, therefore, to add a little glycerin to the solution to retard the evaporation of the water.

Concentrated ointments and solutions of phenol should not be used, the official 2 per cent. ointment probably being as useful as those containing higher percentages of the anesthetic.

Fatal doses of phenol depress the central nervous system, causing profound collapse, which is usually preceded by stimulation of the cord, with increased reflexes and possibly with convulsions. Consciousness is usually retained until late in the course of poisoning, and the condition of the patient may be compared to that of one suffering from surgical shock.

Phenol is absorbed at first fairly rapidly from the alimentary tract, but after the absorption of a large, but not fatal, dose it proceeds more slowly, apparently because of interference with the circulation; hence if the stomach is washed even after severe symptoms of poisoning have developed, a part of the phenol may be removed and the life be saved.

When phenol remains in the stomach bland oils are contra-indicated, because they favor its absorption, but they may be used after the stomach has been washed. White of egg should be administered immediately if it is at hand, but no time should be lost before washing out the stomach with water. Ten per cent. of alcohol may be added to the water if it does not entail loss of time, but no chemical antidote is comparable in effectiveness to the prompt washing with water in abundance. White of egg may be administered after completing the washing, as it serves the double purpose of combining with any remaining phenol and protecting the irritated mucous membrane. One should not permit any theoretical considerations of the antidotal nature of various chemical substances to interfere with the thorough washing of the stomach with water, and when this has been accomplished (the last washing should have little or no odor of phenol), attention should be paid to methods of restoration, stimulation being required if the patient is in collapse.

Concentrated phenol causes corrosion of the esophagus and stomach if it is not removed promptly, and a bland oil, such as sweet oil, is useful to allay the pain *after* the poison has been removed.

Sodium sulphate was long supposed to be an effective antidote to phenol, with which it was said to form a sulpho-carbolate. This reaction does not occur in the body, and one should avoid being misled by this popular fallacy.

Concentrated phenol "burns" on the skin are treated by washing with alcohol or glycerin, and applying an emollient or ointment.

This peculiar white eschar or "burn" is frequently seen on the hands or about the lips of those who have taken the poison by accident or with suicidal intent, and it serves as a guide to the identification of the poison; in such case the treatment of phenol poisoning should be instituted without delay. The odor is characteristic, and it may be detected on the breath in many cases of poisoning.

Salicylic Acid and Salicylates

Salicylic acid differs from phenol by having an H of the latter replaced by the group COOH. Benzoic acid differs from phenol by having the OH of the latter replaced by COOH. Salicylic acid is obtained from oil of sweet birch, or oil of wintergreen, both being composed mainly of methyl salicylate. It is also prepared synthetically from phenol. Benzoic acid is obtained from benzoin and prepared synthetically.

The actions of salicylic acid resemble those of phenol in a general way, but it is less depressant to the central nervous system.

Large doses, such as are used therapeutically, induce symptoms resembling those caused by quinin, and with still larger doses there may be actual narcosis. The toxic symptoms include dizziness, roaring in the ears, a sense of fulness in the head perhaps with headache, and sometimes mental dulness.

Disturbances of hearing are usually transient but sometimes lasting; they are attributable to circulatory disturbances, as are those of vision, but in the more serious cases there may be injury to the nerve cells in the ear. The respiration becomes rapid with large doses, and respiratory failure ensues in fatal cases.

Circulatory disturbances result from the action on the vasomotor centers and partly from the injury to the heart, but the toxic action on the heart is not important except with the largest doses. The vessels of the skin dilate, and sweating is often profuse, the action being similar to that seen with the other drugs of the antipyretic group. The blood pressure falls with the appearance of other symptoms of collapse, when very large doses are administered.

Salicylic acid is absorbed and circulates as a salicylate, probably as sodium salicylate, which is only feebly antiseptic, and there is much uncertainty concerning the mechanism of its action in relieving the pains of articular rheumatism. It has been suggested that salicylic acid has a specific action on the organisms which cause rheumatism, but there is no clear evidence of this. Relapses are more common in those cases in which salicylates are used than in untreated ones.

Salicylic acid and sodium salicylate are irritant to the stomach, and it is customary to administer an excess of alkali with it, preferably sodium bicarbonate, to prevent liberation of the acid by the gastric juice.

Many efforts have been made to prepare substitutes for salicylic acid which would be devoid of the action of the latter on the stomach and central nervous system, while retaining its therapeutic actions. These efforts have been somewhat more successful with regard to obviating the local irritant action on the stomach than with reference to the systemic effects. Several of these substitutes will be discussed later.

The relative value of salicylic acid and the synthetic substitutes for it constitutes a question apart from that of the relative toxicity of salicylic acid itself prepared synthetically and that obtained from oil of wintergreen or oil of sweet birch. There has long been current a mistaken belief that the natural salicylic acid is less toxic than the synthetic product. This belief arose from the fact that early reports were to the effect that the synthetic product contained very poisonous impurities; but recently an extended investigation of the subject was undertaken by the Council on Pharmacy and Chemistry, and comparative results obtained with the natural and synthetic products were reported; these reports were reviewed by W. A. Hewlett, who summarized the results obtained by fifteen clinicians on 139 patients. Hewlett reports that there is no difference between the natural and the synthetic salicylic acid so far as observable results are concerned.[3] The

3. Hewlett, A. W.: Clinical Effects of "Natural" and "Synthetic" Sodium Salicylate, THE JOURNAL A. M. A., Aug. 2, 1913, p. 319.

natural salicylic acid is many times as expensive as the synthetic.

It is commonly stated that salicylates increase the elimination of bile, but this action is probably unimportant therapeutically.

SALOL

Among the various compounds which have been introduced with a view to lessening the toxicity of salicylic acid is phenyl salicylate, or salol, as it is commonly called, consisting of one molecule of salicylic acid united to one of phenol. This is almost insoluble in the gastric juice; hence it does not irritate the stomach; but passing into the intestine, it is decomposed with the liberation of its component parts, the salicylic acid combining with sodium salts to form sodium salicylate, this and the phenol being absorbed.

Salol lacks the disagreeable taste of sodium salicylate, and it does not irritate the stomach; but its actions are obviously those of phenol and sodium salicylate, though these actions are slowly developed.

Human milk is said to contain a ferment capable of splitting salol, and gastric irritation is reported to have occurred in some cases when salol was administered to breast-fed infants.

ASPIRIN

Acetyl-salicylic acid (aspirin) is formed by the introduction of the acetyl group into salicylic acid. It is less irritant to the stomach than salicylic acid It is decomposed in the intestine with the formation of acetates and salicylates; hence its systemic actions are those of salicylic acid.

BENZOIC ACID AND BENZOATES

Benzoic acid differs from salicylic acid in having no phenolic OH group. It is obtained from benzoin and prepared synthetically. Benzoic acid and the benzoates are almost devoid of toxicity for the central nervous system, but they are also much less actively antiseptic and only feebly disinfectant.

The wide-spread use of the benzoates as food preservatives has led to discussions which at times have been more acrid than scientific. We do not know that benzoates are distinctly harmful to healthy adults when taken in moderate amounts even for prolonged periods, but we have no knowledge of their effects on those who are not in good health. Hence it is preferable to avoid the constant use of benzoates in foods.

If one cannot speak in unqualified condemnation of the use of food preservation at all times, there can be no question of the undesirability of using them to cover up and hide the renovation of partially decomposed foods.

Benzoic acid has no important therapeutic uses, so far as its internal administration is concerned. It may be used as a mild antiseptic.

CRESOLS

The cresols differ from phenol by having a methyl group—CH_3—replacing an H of phenol. The official cresol consists of a mixture of three isomeric cresols. Only one of these is desired for its antiseptic action, but it is expensive to separate them; hence the mixture is used where a cheap but efficient disinfectant is desired.

Its action resembles that of phenol, but it is less poisonous and about four times as actively germicidal. It has the disadvantage of not mixing readily with water; hence it is commonly employed in a mixture with an equal amount of potassium soap, known as compound solution of cresol. This is useful for disinfecting the skin, for lubricating the hands and as a vaginal douche. It is inexpensive and may be used for disinfecting rough furniture and rooms which are not injured by washing with soap and water.

It is used as a disinfectant in solutions of 0.25 to 1 per cent. The compound solution is used in 1 to 5 per cent. solutions for washing wounds and as a douche.

CREOSOTE

Creosote is a mixture of phenols and phenol derivatives, including guaiacol and creosol, obtained from beechwood tar.

The systemic actions of creosote resemble those of phenol, but it is credited with being useful as an intestinal antiseptic, and its beneficial effect in the treatment of tuberculosis has been explained as due to this intestinal antisepsis. The odor of creosote in the breath after it had been taken gave rise to the belief that it acts as an antiseptic in the lungs, but it has no destructive action on the tubercle bacilli in the lungs, because they are embedded in the tissues and are therefore inaccessible to the creosote.

GUAIACOL

Guaiacol is one of the chief constituents of beechwood creosote, which it resembles closely in its actions. It is somewhat less actively antiseptic and germicidal.

It is absorbed from the unbroken skin, and is then capable of reducing the body temperature, but it is prone to cause collapse.

It is used much like creosote, over which it has no decided advantages.

The carbonate of guaiacol is a crystalline powder, which is inactive until it is decomposed with the liberation of guaiacol. It is said that this decomposition takes place only in the presence of putrefactive organisms, and that its antiseptic action is developed only where it is needed.

Its tastelessness and the decomposition in the presence of putrefactive organisms would seem to give it a decided field of usefulness.

THYMOL

Thymol is a phenol obtained commercially from oil of ajowan and occurring in oil of horsemint, oil of thyme and other volatile oils. It is frequently used as a urinary antiseptic and of late it has come into considerable prominence as a remedy in hookworm disease.

Thymol iodid, formerly known as aristol, is an antiseptic powder which was supposed to represent the activities of thymol and of iodin, but it is so stable that it has little of the actions of either. There seems to be no sufficient reason for its continued use as a substitute for iodoform, to which it is inferior in antiseptic action. It is nearly odorless; at least, the odor is not nearly so penetrating as is that of iodoform.

It is used as a dusting-powder.

This may be taken as representing the type of preparations which have been introduced as substitutes for iodoform, in which it is sought to secure the antiseptic action of the latter without its disagreeable odor. Many of these preparations have been introduced, but they are not antiseptic unless they are decomposable with the liberation of iodin. Most of them have fallen into disuse, or are employed as dusting-powders,

for which purpose they have no advantage over much less expensive ones.

Betanaphthol, also known as naphthol, is a phenol found in coal-tar, but usually manufactured from naphthalene. It is only sparingly soluble in water (1:950) and is absorbed rather slowly from the alimentary tract. When absorbed in sufficient amounts it is capable of inducing toxic effects, including nephritis and destruction of the red blood corpuscles.

It is more actively antiseptic than phenol, and has been used as an intestinal antiseptic; for this purpose its slight solubility and absorbability are advantages.

H. C. Wood, among others, has called attention to the large volume of fluid which the intestines contain—variously estimated at from 4 to 6 liters—and the large amount of antiseptics which would be required to be effective. While the intestinal antiseptics in common use may exert their action in the small intestine, it seems extremely doubtful whether any of those discussed so far can be administered in sufficient amount to influence the contents of the large intestine to a marked degree.

The subject of intestinal antisepsis by means of drugs intended to inhibit the growth of bacteria has received a great deal of attention, but the results hitherto reported are contradictory and difficult to explain.

There can be no doubt that the nature and character of the infection, its location in the intestinal tract, and the condition of the intestinal mucous membrane and its secretions, as well as the food residues in the bowel, must all influence the results of any efforts at intestinal antisepsis.

It is not certain that absolute asepsis of the intestine is desirable, though it is unquestionably desirable to restrain the growth of putrefactive and other pathologic organisms.

The administration of a brisk cathartic at a time when the body has not suffered serious injury from the toxins of the organisms serves to sweep out enormous numbers of bacteria mechanically, but unfortunately many remain, and if conditions favor their development there will soon be as many as before, for the number which results in one day from the unrestrained development from a single bacterium is inconceivably great.

It is a matter of common experience that calomel affords greater relief in the condition commonly called "biliousness," than do other drugs of equal purgative activity. This can be understood readily when one remembers the various ways just mentioned in which the development of bacteria may be influenced.[4] Others find a brisk saline cathartic more satisfactory in relieving the headaches and depression which are commonly associated with some form of bacterial activity in the intestine.

Attempts to modify the bacterial flora have been made by introducing cultures of lactic acid bacilli, the idea being that they will multiply and, splitting sugar, form lactic acid, which is inimical to putrefactive organisms. This method appears to be attended with some success at times, but the lactic acid bacilli die off rapidly and must be taken constantly for prolonged periods to be of any service.

Numerous forms of this culture are described in New and Nonofficial Remedies.

(To be continued)

4. Intestinal Antisepsis is discussed by Norman M. Harris in THE JOURNAL A. M. A., Oct. 12, 1912, p. 1344.

Therapeutics

PREVENTION IS GREATER THAN CURE

(Continued from page 997)

XXIV

SCARLET FEVER (*Continued*)

TREATMENT

A. Isolation.—Strict isolation measures, already discussed under other headings, are most important in this disease, and the nurse should distinctly understand that it is the secretions of the mouth and nose, and perhaps suppurating complications, that carry infection. Also, she should understand that the greatest possible care to disinfect or sterilize articles contaminated by such secretions should be exercised, as the infecting germ is persistent and lives for a long time unless killed. The best equipment of the most appropriate room available for the care of the scarlet fever patient needs no further discussion. Sunlight is essential, as in all infectious diseases. The most efficient cleanliness of the patient, the nurse, and the physician who handles the case is also essential. If a child in a tenement house or in a house where there are other children cannot be properly isolated, he should be sent to a contagious-disease hospital, if there is such.

B. Diet, etc.—As in the beginning of all diseases, especially the infectious diseases, the bowels should be thoroughly evacuated with castor-oil, calomel, or whatever the physician deems best; subsequently, they should be moved daily by some gentle laxative, found efficient. If the patient has diarrhea, it is generally caused by a mistake in the diet. Milk is the best basis for the diet in scarlet fever. Intestinal indigestion is not frequent. Foods that add products to the blood that during excretion are likely to cause irritation of inflamed kidneys should be avoided.

It is open to discussion whether a mild nephritis is a complication of scarlet fever or a part of the disease. We believe it is a part of the disease, and a logical part of it. Whether germs or toxins are excreted by the kidneys and irritate them, as has been suggested, it is certain that when the skin of one-third or more of the body is inflamed, becomes dry and does not properly secrete or excrete even water, the kidneys almost invariably become irritated, if not inflamed. Theoretically, the more intense the inflammation of the skin, the greater the amount of desquamation, the greater the amount of chilling of the body, and the greater the amount of decomposition products of protein metabolism, the more the liability to nephritis. The aim of the physician, therefore, should be to diminish the inflammation and irritation of the skin, to keep it warm, to attempt to keep it moist and promote its secretion, and to give a diet rather low in proteins and without meat, meat extractives or purins. Also, if possible, no drugs should be administered that tend to irritate the kidneys, especially after the first week of the illness. Such drugs are coal-tar products, synthetic products, caffeins, and any of the drugs that are known as stimulant diuretics. Even drugs that contain salicylic acid should be avoided.

The diet, then, in scarlet fever first depends on the amount of fever and the severity of the illness. The greater the intensity of the disease, the more

liquid the diet should be. While milk is the basis, thin cereal gruels are advisable from the start. It should not be forgotten that death in many an acute disease is now known to have occurred from acidosis, due to a protein and albuminous diet and to withholding starches and sugars. Malted milk may be added to this diet, and lemonade or orangeade or oranges, as deemed advisable. Later, toasted bread, crackers, and various kind of cereals, and still later, baked potato, rice, corn starch, and many other cereal and milk foods, as well as a greater variety of fruit, should constitute the diet.

As soon as the convalescence is established, and even before, if the disease is prolonged, a small dose of iron should be given daily, as on the above diet the blood cannot get this nutriment. A sugar of iron (saccharated oxid of iron) 3-grain tablet should be given from one to three times a day. Sodium chlorid should always be given a patient from the beginning, once or twice a day, in one or more of the feedings. If there is a tendency of the nose and throat to bleed, or there are hemorrhages in any other part of the body, lime-water should be added to the diet. The patient should always receive plenty of water. If any apparent irritation of the kidneys occurs, it may be well to withhold some of the fruits and to temporarily diminish the amount of food.

C. Fever.—The temperature can be very high in scarlet fever and represent a dangerous factor in the disease. If the bowels are properly moved, and the diet is carefully regulated, and the throat, nose and nasopharynx are kept as clean as possible to reduce the secondary streptococcic infection, the temperature will be much lower than when these causes of increased temperature are neglected.

If the temperature becomes very high it may be advisable to give several doses of an antipyretic, such as acetanilid, antipyrin, or acetphenetidin, always bearing in mind the irritant effect of these drugs on the kidneys. Hot sponging of the body will also tend to reduce the temperature and make the patient comfortable. It relieves itching, and many times is soothing. Cold sponging in scarlet fever is inadvisable and uncalled for. If the fever is excessive, tepid sponging may be tried. Restlessness and sleeplessness will also increase the fever, and often a few doses of sodium bromid will be of great benefit. It not only causes the patient to sleep, but reduces the irritability of the peripheral nerves. Also, anything that relieves itching or burning of the skin will reduce the temperature and the irritability. Quinin is inadvisable, as it is excitant to the brain and may tend to congest the ears and add one more element that may cause middle-ear complications. An ice cap to the head, unless actual meningitis is present and the hair is clipped close to the scalp, is inadvisable. Whether ice caps to the head ever reduce general temperature is open to grave doubt. If there is meningitis, they may relieve the local congestion. We doubt if they are ever of much value in general high temperature. In this form of treatment the ice cap should be applied whenever the patient is sponged with cold water. Ice caps, however, tend to fall to one side or the other of the head and unnecessarily chill the ears, and may become another factor in causing middle-ear inflammation. The value of an ice bag over the mastoid when it is in danger is not under discussion; but an ice cap over an external ear is not called for, and may do harm.

D. The Throat and Nose.—Antiseptic, alkaline and cleansing gargles and sprays for the throat and nose are not different from those described under diphtheria. The value of boric acid, both in mixture and as insufflated powder, is the same as in diphtheria. The cleaner the nose and throat in scarlet fever, the less the secondary infection, the less the toxemia, and the less the danger. Whatever method is used to clean the nostrils, such pressure of the liquid as would tend to force infection into one or the other of the sinuses must never occur. If there is no purulent discharge from the nostrils, it is inadvisable to spray or douche them, as much harm can be done from too strenuous or unnecessary treatment of the nose.

E. The Skin.—Whatever the temperature, hot sponging for cleanliness once or twice a day is of advantage, is soothing, and advisable. Whatever the temperature, sponging with alcohol in any form is inadvisable. Alcohol, unless the solution is so dilute as to represent not alcohol, but only an alcoholic odor, will tend to dry the skin, cause more itching, and more discomfort. The more moist the skin, or the more natural oil that is excreted on the skin, the healthier it is. Also, we believe that the less the skin is dried and rendered nonsecreting, the less likely is the danger of a kidney complication. Sometimes sponging with bicarbonate of soda in warm water soothes the irritability and stops the itching. Powdering with some soothing talcum powder often stops itching and quiets the patient.

As soon as the acute eruption is over and desquamation is about to begin, the gentle rubbing into the skin of some bland oil, as cocoanut oil or almond oil or wool-fat, sometimes with a little glycerin and water, hastens the removal of the dried epithelium, prevents scales from flying about (although these scales do not carry the contagium) and is very quieting to the patient, by preventing the irritation and itching. As soon as convalescence is established, a more active massage of the skin and muscles is advisable.

The use of mercuric chlorid or phenol solutions of any strength, or phenol ointments, on the skin, is inadvisable and inexcusable. Most of these solutions tend to dry the skin still more; the use of phenol ointment might result in some absorption and therefore is of danger to the kidneys. Also, as it seems to be a fact that the contagium is not spread by the skin, there is absolutely no excuse for germicidal ointments or applications.

Unless the temperature is very high and head symptoms are present, it is unnecessary to cut the hair close to the scalp. If the scalp itches, as it often does, some simple sedative solution may be used, Later, a simple gentle shampoo may be given and a little petrolatum rubbed into the scalp. A tar soap may stop the itching. Oil of eucalyptus has been recommended and used as a non-irritant application to the skin and scalp. Also, throats have been swabbed with oil of eucalyptus preparations, in the belief that eucalyptus oil is especially antiseptic in throat contagions.

F. The Heart.—Cardiac stimulation, especially in children, is rarely needed in this disease. The toxin of this disease is not as depressant as is that of diphtheria, and strychnin is generally inadvisable as it causes too much cerebral stimulation, especially in children. Death from this disease generally occurs by its very intensity, or from some complication, and is not from prostration and shock. In the malignant

or fulminating form of this disease, in which death may occur on the first or second day, the temperature is generally excessively high, and the pulse may be rapid and feeble, but stimulation of the heart would even then be of but little value. Patients afflicted with this type of scarlet fever often have convulsions, and generally die in coma. Such deaths are often like a fulminating cerebrospinal meningitis.

On the other hand, if a long septic process follows scarlet fever, or there is later a septicemia, small doses of strychnin may be of value, and alcohol is of value as not only adding a food, but as tending to prevent a dangerous acidemia. Also, in such septic conditions, as much carbohydrates should be given as the patient can digest.

If joint complications occur, there is more likely to be an endocarditis, and perhaps chorea may develop.

G. Later Complications.—Inflammations in the nose and its adjacent sinuses have already been sufficiently discussed. *Middle-ear inflammations* should be expected and watched for. The drums should be early punctured if there is pressure, and the services of an expert on diseases of the nose, throat and ears should be early sought by the physician, if any of these complications occur.

It may here be emphasized that it has been proved that hexamethylenamin (urotropin) can be of no value in these throat, nose, sinus, ear, or even meningitis cases as it will not furnish formaldehyd and therefore cause antiseptic action, except in acid secretions or solutions. Also, it is a fact that it can more or less irritate the kidneys; therefore, in scarlet fever throughout its entire course this drug should not be given.

The *glands* of the neck are almost always congested and enlarged in scarlet fever, and one or more may tend to suppurate. It often seems that the local application of a proper-sized ice bag to a gland, if the patient will tolerate such an application, aborts serious inflammation. However, if such a suspicious gland continues to enlarge, the temperature rises and blood counts show an increasing leukocytosis, there is probably pus formation, and the gland should be soon opened. The surgeon, however, often decides that he prefers to have warm applications for a short time to cause more rapid breaking down of the central suppurating portion of the gland, so that more complete evacuation may occur on incision. The subsequent dressings and treatment of such an abscess are purely surgical. The temperature will generally drop after the evacuation of the pus, unless there is some other localized septic process.

Although the percentage of occurrence of *nephritis* in or following scarlet fever is not great, it occurs sufficiently often to be always looked for and expected. As above urged, all drugs that irritate the kidneys, and all foods that cause irritation should be withheld. While it has not been shown that meat will cause nephritis, it is not necessary to add meat to the diet in scarlet fever. Many believe that eggs should not be allowed. The withholding of eggs as a preventive of nephritis hardly seems necessary. Some physicians even withhold salt from the food; this does not seem necessary. If the amount of urine greatly diminishes and albumin appears, there may not be an actual nephritis, but it may be well to attempt to forestall or abort such an inflammation. Hot packs or applications to the lumbar region can do nothing but good. A general body sweat is entirely inadvisable, and the value of profuse sweating in uremic conditions is even quite doubtful. Perhaps the best preventive of nephritis is prolonged rest in bed for at least a week after the fever has ceased, as it seems to be a fact that the better the action of the skin, the less likely are the kidneys to become inflamed, and the skin will be warmer, and is likely to be more moist in bed than when the patient is about. Chilling of the body following scarlet fever is an important added cause for the development of nephritis. Also, if the kidneys have been sufficiently irritated to cause a distinct predisposition to nephritis, an increased use of the muscles, whether by playing, exercise, or work, too soon after the acute symptoms are over, may so increase the excretory substances from muscle metabolism as to add a very tangible factor to further irritation of the kidneys and consequent nephritis. If nephritis develops, the treatment becomes that of acute Bright's disease.

H. Convalescence.—As just suggested, the patient should remain in bed one week after the fever has ceased, and the subsequent convalescence should be prolonged and carefully watched. During the acute stage of the disease the urine should be examined daily, to note the first appearance of albumin and how long it persists. During the convalescence the urine should be examined at least every other day for two weeks, and once or twice a week for several weeks more. The diet should be increased and most foods allowed, except that it may be well for at least two weeks not to give meat. During this period the patient should continue to receive iron. A simple bitter tonic may be advisable to stimulate the appetite. If the weather is cold and damp, great care must be taken that the patient be not exposed.

Just how long the germ of infection persists in the mouth, and especially in the nose, has not been determined, but secondary cases can occur when the patient, especially if he has a nasal discharge, has been allowed to play with other susceptible children. It was long thought that the desquamating skin was the cause of this late infection of others.

As it is conceded that streptococcic infection is concomitant with the cause of many of the complications of scarlet fever, vaccine treatment with stock vaccines or autogenous vaccines has been suggested and advised to hasten the eradication of left-over septic processes. The same rules and regulations, and the same frequency of success will doubtless occur in the septic processes following scarlet fever as with any other septic process.

SO-CALLED SURGICAL SCARLATINA

Although this name has long been given to eruptions that occur during a septic infection, it is very doubtful if they bear any relation to scarlet fever. If real scarlet fever occurs after an operation, the infection probably had nothing to do with the operation or the septic process. That the eruptions from septic processes are probably not scarlatinal was well proved ten years ago by Alice Hamilton.[2]

(To be continued)

2. Hamilton, Alice: Surgical Scarlatina, Am. Jour. Med. Sc., July, 1904, p. 111; abstr., THE JOURNAL A. M. A., July 23, 1904, p. 283.

The Field of the Scholar in Medicine.—To-day medicine is so inclusive that few men venture into other fields without forfeiting their allegiance to it. I would, therefore, define my idea of the scholar in medicine as one who makes medical science or biology which includes medicine, the foundation of his undertakings.—Theobald Smith, *Boston Med. and Surg. Jour.*

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SECRETIN AND THE CAPACITY TO UTILIZE SUGAR

Since the discovery of the digestive functions of the pancreatic juice, the pancreatic gland has been the subject of two classic investigations, each of which has furnished new points of view and given direction to special investigations in physiology and pathology. One of these was the announcement of the production of experimental diabetes by extirpation of the pancreas, that brilliant discovery which our science owes to Minkowski and von Mering while working in Naunyn's laboratory in the clinic at Strassburg in 1889. This has, without question, been one of the epoch-making discoveries in this field, fruitful in its bearings on subsequent research, and establishing once for all the association of the pancreas with carbohydrate metabolism in some way independent of the secretion of the pancreatic juice.

The second splendid novel investigation was the finding of secretin by Bayliss and Starling of London, in 1902. The discovery of a fairly specific chemical stimulant for the pancreatic gland, acting through circulatory rather than nervous channels, and furnishing a rational explanation of the unique regulatory interrelations between the digestive functions of the intestines and the gland furnishing secretions to it, suggested many new questions. The advent of the hormone idea has been welcomed as an aid to the possible solution of hitherto most perplexing situations in the economy.

Although the relation of the pancreas to carbohydrate metabolism has generally been regarded as entirely distinct from those functions of producing an external (in contrast with an internal) secretion with which the secretory hormone is concerned, there have been intimations from time to time that the two phenomena might, after all, be somewhat connected. A few years ago, several serious clinical studies were made in relation to this point. It was believed for a time by some of the participants that a favorable influence could be exerted in cases of human diabetes of pancreatic origin by stimulating the failing organ through administration of secretin obtained from duodenal extracts. The underlying hope was, of course, that, since secretin has the property of causing a greatly increased flow of pancreatic juice, it might also provoke other activities of the pancreas at the same time. The consensus of clinical reports, as well as the more critical laboratory findings, has been unfavorable, and this proposed therapeutic procedure is now practically abandoned.

An aftermath of these discarded attempts is found in a recent attempt, at the pharmacologic institute in Göttingen, to determine the possible interdependence of the so-called internal and external secretory functions of the pancreas in another way. By detailed experiment, Loeb and Stadler[1] have ascertained the assimilation limits of a series of animals for glucose before and after administration of secretin. The introduction of the carbohydrate was accomplished intravenously so as to exclude the alimentary variables that attend oral administration.

The results were clearly negative. The limit of utilization of glucose was not at all altered by the presence of the additional hormone inciting the secretion of pancreatic juice. Whether or not the secretory and metabolic functions are associated with entirely different sets of cells is not decided by this research. With the failure to affect the assimilation capacity for carbohydrates in this experimental way, the failure of the secretin therapy in diabetes is again emphasized.

WHY PHYSICIANS ERR IN DIAGNOSIS

Since the announcement by Cabot[2] that post-mortem findings reveal a high percentage of incorrect clinical diagnoses, the question as to the reason is important. In many institutions special attention has been devoted to the problem, and in the city of New York it was made the subject of a municipal report.[3] Recently, in London, a well-known graduate school invited thirty-four specialists to speak on common mistakes encountered in their particular fields. In a review of these lectures, Abrahams[4] has presented an outline and analysis of the causes of error. It was, of course, surprising to find that the field of medicine could be divided into thirty-four specialties. A few decades ago such a series of lectures could include but five or six topics. To-day the chest is divided into the lungs and the heart, and, says Abrahams, "even the cardiac specialist exhibited a marked tendency to dichotomy, for a struggle between displaying his experiences as a

1. Loeb, O., and Stadler, H.: Aeussere und innere Pankreasfunktion, I, Sekretin und Zuckerassimilation, Arch. f. exper. Path. u. Pharmakol., 1914, lxxvii, 326.

2. Cabot, R. C.: Diagnostic Pitfalls Identified During a Study of Three Thousand Autopsies, THE JOURNAL A. M. A., Dec. 28, 1912, p. 2295.

3. Summary of Findings, Conclusions and Recommendations with Regard to Autopsy Findings, Section III of the Report of the Committee on Inquiry into the Department of Health, Charities and Bellevue and Allied Hospitals in the City of New York, 1913.

4. Abrahams, Adolphe: Common Errors in Diagnosis, Practitioner, London, 1914, xciv, 380.

clinical diagnostician and his skill as a mechanical cardiologist was manifest."

Errors in diagnosis are due to certain definite causes. The large percentage of such errors are avoidable, but only by ascertaining wherein the defect lies can improvement be possible.

Abrahams classifies errors on the part of physicians into two groups, social and clinical.

Social errors, under which are listed (1) bad deportment and (2) lack of tact, affect chiefly patients suffering from such functional disorders as hysteria, psychasthenia and neurasthenia. Social errors prevent the physician from gaining the necessary confidence of such patients and inhibit the establishment of the thorough sympathetic understanding which should exist between the functional neurotic and his physician.

Clinical errors are due to (1) ignorance, (2) faulty judgment, (3) obsession, (4) failure to think anatomically, (5) failure to think at all, (6) reluctance to accept responsibility, (7) inherent difficulties in the case and (8) incomplete examination. Naturally these divisions may overlap in their application to any special case.

As examples of gross ignorance, the author mentions overlooking a large amount of cerumen as a cause of deafness, or diagnosing a swelling in the abdomen, four days after labor, as "acute metritis" when in reality it is a bladder full of urine. Ignorance itself may, indeed, be classified as the ignorance of fundamental facts, ignorance of the existence of rare conditions and the almost inexcusable ignorance of the recent progress in medical science.

An error of judgment is the diagnosis of mental defect in a child who is merely deaf. The physician who diagnoses pregnancy when it does not exist, or vice versa, commits an error of judgment, which he always regrets far beyond what at first thought seems to be the gravity of his error.

Much more rare is the error due to obsession; it is well-known that the syphilologist is inclined to see in every lesion the results of the widely spread *Treponema pallidum*. To think anatomically means to consider in the analysis of any local condition all the possible anatomic and physiologic relationships of that part.

Mistakes from inherent difficulties in the case are the type which can be condoned. Circumstance alone may supply insuperable difficulties. There are human limitations. A shadow in a roentgenogram is but a shadow, and any one might mistake a gallstone for a stone in the right kidney, or a calcified gland for either.

Sad to confess, mistakes from incomplete examination form the largest class. Nearly all avoidable blunders result from this cause. Insufficient examinations are due usually to lack of time, sometimes to laziness. There are, of course, patients who object to complete and thorough examination. This can never be a satisfactory excuse; a case should be relinquished when it cannot be sufficiently studied. "It is better," warns Abrahams, "to lose a patient than to lose a reputation."

Bissell and Le Count[5] have analyzed the relations of the clinical diagnosis to the post-mortem findings in two hundred deaths in coma. In brief, their study has shown that there is a gradual increase in the number of correct diagnoses with the length of time patients are under observation.

There is, then, one class of mistakes which can be condoned. This class is bounded by human limitations. The others are avoidable. Mistakes due to gross ignorance and faulty judgment may be overcome and are being overcome by increased preliminary requirements and other improvements in medical education and by an endeavor on the part of most physicians to keep abreast with the advance in medical knowledge. Mistakes due to lack of time and thorough study will be overcome when physicians resolve to study each case thoroughly with the use of the many available accessories to medical practice.

RELATION OF DIET DEFICIENCIES TO THE PROPORTIONS OF THE FOODSTUFFS

The possibility of inducing a characteristic polyneuritis in birds by feeding them an exclusive ration of polished rice has afforded a great impetus to the study of the deficiency diseases, of which beriberi is now accepted as one characteristic type. The phenomena of this experimental condition and the symptoms in human cases have much in common, and evidently afford something more than mere analogy as a basis for studying the pathologic factors and curative procedures that suggest themselves. The general contention that beriberi is essentially privatory in origin is widely accepted; but there are many details yet to be worked out. The nature of the substance or substances missing from the diet on which maintenance of health depends is unknown, and the problem of contributory factors has scarcely been attacked.

The earlier experiments, which have been reviewed in THE JOURNAL from time to time, have given the impression that the fundamental feature in this type of polyneuritis is the lack of a certain quantum of the so-called "vitamins." It follows from this that if the missing ingredient is supplied, there will be a restoration of function. If polished rice is more or less deficient in certain essential food components, one might naturally expect that the feeding of more rice (with whatever "vitamins" it still contained) would retard rather than hasten the onset of deficiency disease. This is quite the reverse of what has been found in experimental trials. Several investigators, though not

5. Bissell, W. W., and Le Count, E. R.: A Consideration of the Relative Frequency of the Various Forms of Coma, THE JOURNAL A. M. A., this issue, p. 1041.

all, report that birds consuming larger rations of polished rice develop polyneuritis sooner than those on a smaller intake. In some instances it is further declared that additions of rice to certain otherwise suitable diets favored the onset of symptoms. Otherwise expressed, it appears that when the ration is increased by the addition of a material like polished rice, with a very low content of antineuritic substance, although the daily allowance of active substance is slightly increased, the development of polyneuritis is actually accelerated.

A possible explanation for the foregoing apparently anomalous facts has been proposed by Braddon and Cooper.[1] They believe that the amount of antineuritic substance required by the organism increases with the quantity of carbohydrate metabolized. As Braddon and Cooper express it, for the maintenance of health the intake of active substance must therefore be adjusted so as to stand in some quantitative relation to the ration of carbohydrate ingested. It is when this necessary balance is not maintained in the dietary that, according to these British writers, beriberi results.

If it shall prove correct that a deficiency disease may develop when a dietary containing an adequate amount of antineuritic substance for ordinary needs is supplemented by carbohydrate deficient in the essential substance, features of practical importance at once suggest themselves. We are reminded by Braddon and Cooper that attention must be paid not only to the absolute amount of antineuritic foods in the dietary, but also to the proportion which this bears to the amount of carbohydrate in the ration. According to Braddon,[2] certain facts in human beriberi parallel these observations on birds. In epidemics of the disease in man, the well fed are actually more likely to succumb than the underfed. Furthermore, in some asylums and prisons in which the dietary has been varied from time to time, every increase in the polished rice component, that is, the carbohydrate intake, the rations of other foodstuffs remaining the same, has been attended by increased beriberi.

If these newer views of the quantitative relations of the antineuritic substances shall be substantiated by further investigation, and it shall be shown that the need of such accessory food components involves relative as well as absolute demands, the problem of economic utilization of these active substances will arise. The advice of Braddon and Cooper is a safe guide where deficiency diseases are likely to arise: The proportion of antineuritic foods in the diet should be maintained as high as possible, and large rations of foods deficient in the essential substances should be avoided. Our knowledge of the latter needs to be extended greatly.

1. Braddon, W. L., and Cooper, E. A.: The Influence of Metabolic Factors in Beriberi, Part I, The Effect of Increasing the Carbohydrate Ration on the Development of Polyneuritis in Birds Fed on Polished Rice, Jour. Hyg., 1914, xiv, 331.
2. Braddon, W. L.: Cause and Prevention of Beriberi, London, 1907.

A GERMAN DECISION IN RELATION TO A FOOD PRESERVATIVE

The decision of the Supreme Court in the case of the now famous bleached flour, over which a legal contest was begun in Kansas City in 1910, has been interpreted by some as virtually nullifying the pure food law of 1906. As a recent writer[1] has stated it, the decision has been construed to mean that the government is now compelled to prove by more direct evidence than heretofore that a given food product containing a given added ingredient is poisonous or injurious to health, because of the presence of the added injurious substance—in other words, that the government must be able to produce demonstrably injurious effects by feeding experiments with the adulterated food.

In a recent "health talk" on preservatives in foods, Folin[1] has taken a position that must commend itself to those who favor a conservative attitude in this much-debated field. There is no known chemical poison, he reminds us, the effect of which is so deadly that a person cannot take a little of it without suffering any serious consequences. While this is unquestionably the correct position, so far as producing demonstrably injurious effects in a relatively short time is concerned, it is, he thinks, not a theoretically sound position, when it becomes a question of the consumer's being called on to take the drug or chemical to the end of his days. Here it is not a question of being poisonous, but rather of being merely injurious to health. And here we are, in his judgment, bound to take the position that any substance known as a poison must be assumed to be injurious to health, even when taken in the smallest doses, unless we have definite and specific reasons for believing that it fails to have any effect when the dose is minute. Hydrochloric acid, common salt, and possibly acetic acid, benzoic acid, and alcohol might be named as substances which are poisonous in large amounts, but which may be regarded as harmless if the amounts taken are sufficiently minute. Folin thinks that, in the case of most dangerous chemicals, it is neither safe nor sound public policy to assume that they may be made ingredients of our daily food, even though the quantities used may be small as compared with the doses capable of producing demonstrable results. So long as failing health before old age is as common as it is, we cannot afford to extend the benefits of reasonable doubts to any poisonous or deleterious ingredients added to our food.

A recent decision of the referees in the case of a contention before the Prussian government in relation to the use of cinnamic acid as a food preservative illustrates how in Germany the burden of proof has been placed on the manufacturer rather than on the consumer and his government. Cinnamic acid, even in comparatively small concentrations, has undoubted

1. Folin, O.: Preservatives and Other Chemicals in Foods: Their Use and Abuse, Harvard University Press, 1914.

preservative efficiency, and is presumably more active than either benzoic or salicylic acids of the same strength. A preparation consisting of this acid mixed with milk-sugar has been offered for sale as a preservative for marmalades, fruit juices and conserves of various types. The toxic dose of cinnamic acid is comparatively large, amounting to several grams per kilogram of body weight in small animals. Little is known about its action on metabolism or its pharmacologic behavior; and despite the fact that the salts of cinnamic acid were at one time employed somewhat as medicinal agents, it is impossible to make any convincing statements on the basis of existing literature. The evidence at hand, it must be admitted, does not suggest any particularly harmful character for preservative doses.

There is no compromise in the German report of Professors Heffter and Rubner[2] of the University of Berlin. We quote their decision verbatim. "The harmlessness of phenakrol—the product in question—as alleged in the advertisements of the manufacturer is by no means proved. From the point of view of the public health, therefore, we must be skeptical in regard to the use of cinnamic acid as a preservative so long as there are no conclusive experiments in existence to demonstrate the entire innocuousness of this substance for the human organism." There is no subjugation of public interests to private gains in such an attitude.

Current Comment

LESIONS OF THE HYPOPHYSIS IN DIABETES INSIPIDUS

When diabetes insipidus occurs without any apparent organic lesion, the cases are spoken of as primary or idiopathic. In a large proportion of the instances of diabetes insipidus there is organic disease in the brain or elsewhere; such cases are classed as secondary, the organic lesion being regarded as the cause of the polyuria. Trauma of the brain, cerebral hemorrhage, and all kinds of intracranial growths, whether true tumors or granulomatous, may be followed by diabetes insipidus. Cerebral tumors probably head the list of the gross lesions associated with this form of diabetes, but in many cases cerebral syphilis is present, usually in the form of a basilar syphilitic meningitis. It has been assumed that basilar meningitis and other lesions at the base of the brain may cause polyuria by irritation of the cerebellum, pons or medulla because polyuria has been produced experimentally by injury to these parts. There is another explanation, however, of the manner in which organic lesions at the base of the brain may cause polyuria, namely, by involvement of the posterior part of the hypophysis. Instructive instances of diabetes insipidus associated with lesions of this part of the hypophysis have been recorded recently. Thus Goldzieher[1] records a case in which in addition to syphilitic meningitis, there was a gummatous formation in the region of the hypophysis with atrophy of the posterior part. Berblinger[2] describes an instance of dystrophia adiposogenitalis with polyuria in which there was found a sarcoma of the frontal part of the brain infiltrating the posterior part of the hypophysis. Simmonds[3] reports diabetes insipidus in four of seven cases of metastatic tumor in the pars posterior and infundibulum. Three of Simmonds' four cases were secondary carcinoma, the primary tumor being in the breast. Other instances could be cited, but enough has been said to indicate that there is some connection between diabetes insipidus and lesions in and about the hypophysis, especially the posterior part. Whether the polyuria in these cases is due to disturbance in functioning, or complete destruction of certain parts, of the hypophysis, and if so how, are questions for the future which can be solved only by a careful study of as many cases of diabetes insipidus as possible. It would seem to be of special interest to examine closely into the condition of the hypophysis in the so-called idiopathic form of diabetes insipidus.

SOME FACTS ABOUT RAT PLAGUE

In view of the admitted importance of the rat in the transmission of plague, the study of the distribution of this disease among the rodents has become quite as necessary from the point of view of preventive hygiene as is the management of the human cases when they arise. A decade or two ago the investigation of the epidemiology of disease among such lowly animals would have seemed a gratuitous inquiry, interesting perhaps from a purely scientific aspect, but without any direct application to the problems of public health. Modern knowledge has, however, taught the unsuspected significance of work along these lines. The expeditions for the discovery of plague-infected rats have become important features in preventive medicine. The activities of the United States Public Health Service in this direction have become familiar to readers of THE JOURNAL. Some phases of the ban against the rat in England are presented in a recently published report to the Local Government Board[4] on an inquiry into rat plague in East Anglia during the period from July to October, 1911. The magnitude of a single campaign of this sort intended to ascertain the limits of infection of an area which had previously been found to be infected is shown by some of the statistics. During four months 15,332 rats were examined for plague infection — a task itself of no mean proportions. As a result of the dissection of this large number of rodents at the Ipswich laboratory, thirty-five of the rats were found to be plague infected.

2. Heffter, A., and Rubner, M.: Gutachten der königlichen wissenschaftlichen Deputation für das Medizinalwesen vom 8 Juli 1914 betreffend die Verwendung von Zimtsäure zur Nahrungsmittelkonservierung, Vrtlschr. f. gerichtl. Med., 1914, xlviii, 308.

1. Goldzieher: Verhandl. d. deutsch. path. Gesellsch., 1913, xvi, 272.
2. Berblinger: Verhandl. d. deutsch. path. Gesellsch., 1913, xvi, 281.
3. Simmonds, M.: München. med. Wchnschr., 1914, lxi, 180; abstr., THE JOURNAL, March 7, 1914, p. 818.
4. Eastwood, A., and Griffith, F.: Report to the Local Government Board on an Inquiry into Rat Plague in East Anglia During the Period July-October, 1911, Jour. Hyg., 1914, xiv, 286. Macalister, G. H., and Brooks, R. St. J.: Report on the Post-Mortem Examination of Rats at Ipswich, ibid., p. 316.

Twenty-seven premises were found to harbor plague-infected rats. The places were all within an area previously pronounced to be infected. As a matter of incidental interest pointing to the difficulties in such work, it may be noted that at certain periods the cases could not be diagnosed on post-mortem examination alone with any certainty. In the earlier season of the epizootic, infected rats sometimes presented atypical appearances. It was found that features suggestive of plague infection may be simulated by rats infected with trypanosomiasis or with bacilli of the Gaertner group. Fallacies in direct microscopic diagnosis are presented by certain intestinal and putrefactive organisms. The most valuable diagnostic points are the presence of subcutaneous congestion, pleural effusion, and necrotic changes in the liver. These should be considered collectively. An economic as well as hygienic advantage in the antirat crusade is shown by the experience of this English investigation, like others that have previously been conducted. The rat destruction, which had been maintained by local enterprise for somewhat more than a year, had, in many localities, appreciably diminished the rat population.

THE HYGIENE OF GAS LIGHTING

When an innovation in the industrial world tends to replace some older, long-established practice, one frequently sees a vigorous defensive response on the part of the supporters of the process that is being outdistanced. This reaction usually redounds to the advantage of all concerned. It functions as a stimulus to self-satisfied interests to become rejuvenated to meet new conditions of commerce, it spurs the losers to renewed effort to regain lost prestige, and the end-result not infrequently is the discovery or invention of novelties which improve the conditions of existence and reduce the cost of living. As a specific instance of such commercial rivalry, which is widely reflected in the affairs of everyday life, the competition between gas and electricity may be mentioned. Usually the determining factor in the use of two sources of energy for heat or light effects is a purely economic one. Electric lighting, when once perfected to a stage where it became an efficient and reasonably economical process, threatened to supplant gas lighting within doors for purely hygienic reasons. The pollution of the air by the products of incomplete or complete combustion of the illuminating material is avoided by the electric light. Large quantities of hot combustible gases are not formed and need not be removed. The contrast in the conditions that may be brought about by the two systems is too obvious to require a detailed description. The defenders of the modern systems of illumination with gas have advanced certain considerations quite independent of the relative intensity and quality of the light produced. They have entered the hygienic field with the claim that the great production of heat in gas-light fixtures brings about a natural ventilation effect through the air currents it produces, so that the products of combustion, notably carbon dioxid, are never allowed to accumulate unduly in the atmosphere, and an excessive rise in temperature is also prevented by the movement of the air. To this has been added the statement that, with gas lighting, the micro-organisms of the air in the rooms involved are destroyed by the flame itself and likewise by the traces of combustion products like sulphurous acid which exhibit an antiseptic action. The allegations in respect to the effect of gas lighting on the bacterial content of the air have been investigated in the Hygienic Institute of the University at Munich by Ahlborn.[1] In a room of 57 cubic meters' capacity under uniform artificial circulation of the atmosphere, the content of bacteria in a unit volume of air decreased 24 per cent. in one hour. Under precisely comparable conditions, including the presence of three large gas-light flames with open globes, the content of micro-organisms decreased 40 per cent. in the same period. This increased destruction of bacteria is undoubtedly attributable to their burning up in contact with the incandescent surfaces or their destruction by the heated gases that are produced. The point for emphasis, however, is the fact that such differences in bacterial content, amounting at best to only 16 per cent., are too small to possess any serious significance from the point of view of practical hygiene. The argument for the superiority of gas lighting in this respect can scarcely be maintained.

DIET AND THE IODIN CONTENT OF THE THYROID GLANDS

Attention has recently been directed to the seasonal variation in the iodin content of the thyroid glands;[2] and the bearing of this on the standardization of commercial thyroid products, and perhaps also on their dosage, has been brought to notice. Other factors than the unexplained ones associated with the seasons and the species are known to enter into the regulation of the storage of iodin in the glands. It is now well known that administration of iodids leads to an augmentation of the gland halogen content. In an illustrative case the continued daily feeding of small quantities of sodium iodid for six or seven weeks has been found to double the iodin content of a sheep's thyroid. Not only extraneous iodin-yielding salts administered as drugs, but likewise iodin present as a constituent of the diet can be stored in the thyroid gland. If further evidence of this were required, it could be found in a report of analyses of sheep's thyroids from islands of the Orkney group, which lies to the north of Scotland.[3] The native animals run wild there in many places, and during the winter subsist to a considerable extent on seaweeds. The latter are notable as sources of iodin in organic combination.[4] In the Orkney sheep thyroids examined by Hunter and Simpson, the concentration of iodin

1. Ahlborn, K.: Die desinfizierende Wirkung der Gasbeleuchtung auf Zimmerluft, Arch f. Hyg., 1914, lxxxiii, 155.

2. Seidell, A., and Fenger, F.: Bull. 96, U. S. P. H. S., 1914. Seasonal Variation in Composition of Thyroid Gland, editorial, THE JOURNAL A. M. A., Jan. 9, 1915, p. 155.

3. Hunter, A., and Simpson, S.: The Influence of a Diet of Marine Algae upon the Iodine Content of Sheep's Thyroid, Jour. Biol. Chem., 1915, xx, 119.

4. Cameron, A. T.: Jour. Biol. Chem., 1914, xviii, 335. The Distribution of Iodin, editorial, THE JOURNAL A. M. A., Nov. 28, 1914, p. 1957.

ranged from 0.42 to 1.05 per cent. of the dry substance, the average for the group analyzed being as high as 0.7 per cent. in contrast with comparable American data which range decidedly lower. So long as the iodin content of the thyroid remains as the index to therapeutic dosage, such features deserve to be borne in mind.

ANCYLOSTOMA, NOT ANKYLOSTOMA

The International Commission on Zoological Nomenclature has recently decided on generic names for a number of the nematode and gordiacea worms.[1] Two genera of hookworms are concerned of special importance in medicine. The Old World hookworm has long been known under a generic name, indicating the marked characteristic of the parasite, the hook-like curvature of the oral end of the body. This name, which is derived from the Greek ἀγκύλος, hooked, and στόμα, mouth, has been spelled in a bewildering variety of ways, about twelve in all, according to Stiles, among which we have ankylostoma, anchylostoma, ankylostomum, ancylostoma and ancylostomum. The committee has selected the form "ancylostoma" which, it suggests, should now be regarded as official. This spelling has not been used in medicine, so far as we know; "ankylostoma" (or "ankylostomum"), which represents most closely in spelling and pronunciation the Greek words from which it is derived, is the form usually preferred in medical dictionaries. We do not know what considerations induced the commission to choose the spelling "ancylostoma," which apparently also involves a change in pronunciation, but possibly the choice will illustrate the proverb, "You may lead a horse to water but you cannot make him drink." The authority of the commission might well have paramount influence in the naming of a newly discovered species or genus; but, however desirable uniformity in scientific nomenclature may be, it is very doubtful if even an international commission can so radically change established spelling and pronunciation. The commission has adopted the generic name "Necator" for the New World hookworm. Usage has been divided here, and this decision, which gives the weight of authority to one of the two names in general use, will, we believe, meet general approval.

1. Opinions Rendered by the International Commission on Zoological Nomenclature, Opinion 66, Pub. 2359, Smithsonian Institution, Washington, February, 1915.

THE BLOOD IN STARVATION

The physiologic conditions which arise in starvation are of particular interest to the physician, because there are not a few diseased states of the organism in which complete or partial inanition inevitably arises. Furthermore, the reaction of the body to a situation created by a lack of adequate food illustrates the way in which the organism meets physiologic emergencies. It has long been known that the various organs and tissues do not suffer to an equal degree in starvation. In comparing the loss of weight of the individual organs, for instance, the nervous system shows only a small depletion as compared with the other organs. In a long period of inanition we recall a recorded instance in which the loss of adipose tissue was estimated at 97 per cent.; of liver, at over 50 per cent.; of muscles, at 30 per cent.; whereas the heart and nervous system each lost only about 3 per cent. of their estimated initial weight. Such facts must not be interpreted to mean that the metabolism of the heart and the nervous system is comparably slight during starvation. It is far more likely that one organ may derive its nutriment during starvation from other tissues and thus exist at their expense. It might be expected that the circulating blood, which acts as an intermediator between the various parts of the body, would also preserve its integrity in this way as long as possible, so as to permit the performance of the normal functions as efficiently as the lack of ingested nutriment would allow. There are numerous records of the condition of the blood during inanition, in the case not only of experimental animals, but also in fasting man. These have not invariably been associated with any disease responsible for the consequences; for fasting has been undertaken from the most diverse motives, "religious, scientific, suicidal, personal aggrandizement, as a fad, and without motive, the result of diseased body or mind." Few authentic instances in which the blood has actually been studied in inanition cover so long a period of fasting in man as the case reported by Ash.[1] The subject was Levanzin of Malta, who fasted for thirty-one days under the supervision of Dr. Benedict, director of the Carnegie Nutrition Laboratory in Boston. The outcome, so far as the changes in the blood are concerned, was essentially negative. The hemoglobin appeared to be particularly resistant, the percentage on the last day being within 2 per cent. of the highest estimation on the day before the fast began. The moderate fluctuations in concentration of solids call for no special comment. As for the cellular elements, there was a decided rise in the polymorphoneutrophils in the early days of the fast. This, in fact, was the only prominent feature of the successive blood pictures. Ash attempts, though with extreme reserve, to account for this change by the suggestion that the leukocytes are the most sensitive of the blood-cells to alterations in body conditions. They seem alert to rush to the defense of the organism; and it may be that in the early period of starvation unusual conditions arise to call forth a mobilization of these neutrophil cells. As Ash remarks, the results of the blood examinations in prolonged hunger in man are conspicuous rather from the absence than from the presence of striking alterations in the blood picture. The blood as a whole is distinctly resistant to effects of uncomplicated inanition, without deleterious consequences, even in periods so long as thirty-one days. The advantage of this unimpairment of the circulating medium with its oxygen-carrying power and other fundamental functions is obvious. Death by starvation is, as a rule, not the result of death of all the organs of the body at once; but it depends more likely on the ultimate disturbance in the nutrition of a few.

1. Ash, J. E.: The Blood in Inanition, Arch. Int. Med., July, 1914, p. 8.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Smallpox Inspectors Relieved.—The special antismallpox campaign in Montgomery has come to an end and the ten extra inspectors added to the force were relieved of duty. Commissioner Brassell says there were fewer cases during 1915 than during the same period of 1914. Many of the victims removed to the detention camp were from other places. Thirty cases were handled at the detention camp during the week of March 10.

COLORADO

Personal.—Dr. Edward F. Lake, Denver, has been obliged to discontinue practice on account of malignant disease of the tongue.——Dr. Alfred I. Hayes, Victor, was seriously injured by the overturning of his automobile, March 3.

Solly Tuberculosis Society.—During the year that has elapsed since the organization of the Solly Tuberculosis Society, nine meetings have been held at which lung surgery, the effects of the climate on tuberculosis, tuberculin as a diagnostic and therapeutic measure, surgery in tuberculosis, tuberculosis in children, laryngeal tuberculosis, artificial pneumothorax, the development of the sanatorium idea and the Roentgen ray as a diagnostic help, have been presented and discussed.

CONNECTICUT

Stream Pollution.—In 1913 the legislature directed the State Board of Health to make a survey and report on stream pollution in the state. The report has been made to the present legislature. It gives facts regarding sewerage systems on the watersheds of all rivers of appreciable size, together with information about the discharge of factory wastes into the streams. Analyses of samples of river water collected at designated points show that with few exceptions all the streams give evidence of pollution. The board has prepared and has introduced bills for the correction of this pollution.

FLORIDA

Bill for Epileptic Colony.—Dr. Daniel C. Main, Welaka, and others have prepared a bill to be presented to the legislature authorizing the appointment of a commission to select a suitable site in the state for the use of a colony for epileptics and feeble-minded persons. For this purpose an appropriation of $50,000 is asked.

Personal.—Brig. Gen. Henry Bacon, M. C., Florida N. G., Jacksonville, who has been in the military service of the state since 1889, has been placed on the retired list at his own request, after serving nearly twenty-five years as colonel and surgeon-general of the state.——Dr. Graham E. Henson has succeeded Dr. Mark B. Herlong as city physician of Jacksonville.

Hospital Notes.—The board of trade of Quincy and others are interested in the plan to organize a company with a capital stock of $5,000 to $10,000 to erect and equip a hospital in that place.——The Hospital Association of Ft. Myers has decided to borrow the money necessary to get the hospital building ready for use.——The DeLand City Hospital has already been opened and a list of 200 guarantors is being secured to insure the permanency of the enterprise.——Plans have been awarded for the building of the new Morton B. Plant Endowed Hospital, Clearwater.

State Health Board Exhibit.—The State Board of Health has at last realized its plan of preparing a campaign of education of the people of Florida by illustrating in graphic form the work which it has been doing for many years. The exhibit consists largely of panels illustrating health conservation, malaria, typhoid fever, smallpox and vaccination, the work and care of indigent crippled children, communicable diseases, hookworm, campaign against tuberculosis, the care, feeding and dressing of babies, rabies, cancer and pellagra, etc. The exhibit has thus far been shown in Jacksonville, Tampa, Sanford, Orlando, Lakeland, Palatka, Ocala, Pensacola, and is now in Tallahassee.

GEORGIA

Surgeons' Club to Meet in Augusta.—The Georgia Surgeons' Club has accepted an invitation extended by Augusta surgeons, to hold its next annual meeting in Augusta, in February, 1916.

Hospital Work Instruction.—The State Board of Health is giving a course of instruction to prospective candidates for the position of district health commissioner. This course commenced March 16 and will continue for six weeks.

Personal.—Dr. Henry M. Fullilove, Athens, has been elected state convict physician.——Dr. Alfred S. Oliver, Elberton, was acquitted March 11 on a charge of having murdered Dr. James P. Thompson, Elberton.——Dr. Robert L. Fox, Brunswick, was shot and slightly wounded by Monroe Phillips, March 7.——Dr. William D. Jennings, contagious disease physician of the Department of Public Health of Augusta, has resigned to accept the position of police and fire surgeon of the city.——Dr. George S. Morse has been appointed medical inspector of the negro schools of Atlanta, succeeding Dr. Hilliard D. Canady, Jr.——Dr. Obe C. Gibson, Macon, has recovered from his recent illness and has resumed his work.

Hospital Notes.—Macon has voted to issue bonds for $150,000 for the Macon Hospital, by a vote of 1,092 to 27.——Quarters for the Cooperative Hospital, Atlanta, have been obtained at 201 Capitol Avenue and for the Hospital for Women and Children at 33 Irwin Street. The Cooperative Hospital opened March 16, but the date for the opening of the Hospital for Women and Children is not yet announced.——The board of county commissioners of Tift County has agreed to appropriate $50 a month toward the maintenance of a hospital at Tifton.——Among the needed improvements at Grady Hospital, Atlanta, are the establishment of a psychopathic ward, a social service department and a thoroughly equipped clinic.——Plans are being made for a new municipal hospital at Rome.

ILLINOIS

Sanatorium for Negroes.—Drs. Arthur D. and Isabell M. Barnette Butler have founded a sanatorium in Evanston for the care of colored patients.

Many in County Hospital.—Cook County Hospital, with a capacity for 2,200, has at present 2,016 patients under treatment. The warden reports that all cases excepting those of emergency are investigated by two members of the house staff before admission and that persons who can afford to pay are sent to other hospitals.

Municipal Sanatorium for Rock Island.—The medical commission composed of Drs. Joseph De Silva, Bernard J. Lachner and Louis Ostrom, Jr., named to have charge of the Rock Island Municipal Tuberculosis Sanatorium, has appointed an architect to prepare plans for the institution. There is now in hand more than $12,000 for the sanatorium and this will be increased by more than one-half by the taxes now being collected.

Chicago

Postgraduate Schools Unite.—The union of the Post Graduate Medical School and Hospital, the Chicago Polyclinic and Hospital and the Henrotin Memorial Hospital, has been announced.

Leper in Chicago.—Dr. Edward T. Kennedy of the staff of the Robert Burns Hospital discovered a case of leprosy, March 5. The patient has lived in Chicago eighteen years and therefore cannot be deported.

Chicago Nurses Start for Russia.—Five nurses of Chicago left for Russia, March 17, and sailed from New York, March 20. Up to the present time, seventeen nurses have gone from Chicago to work with the American Red Cross in Europe.

New Field Hospital.—The organization of Field Hospital No. 2 has been authorized by the Adjutant General and Major Gustavus M. Blech, M. C., Ill. N. G., has been assigned to its command. Major Blech has been succeeded as executive officer of Field Hospital No. 1, by Captain Frederick O. Fredrickson, M. C.

Difficulties in Enforcing Ordinances.—In February, 1912, the health department sued the Chicago City Railway Co. for bad ventilation in one type of cars. The city established its case but the court refused to impose the penalty provided by the ordinance and dismissed the complaint. The case was carried to the court of appeals, which has just decided in favor of the city. The *Bulletin* of the department calls attention to this as an illustration of the difficulty the department

has in enforcing important health ordinances. It is said that practically every attempt to control any important corporation or group of industries has to be fought through to the supreme court, but the department has not lost a single important suit of this character in the past four years.

KANSAS

Survey of Milk Supply of State.—A milk survey covering the supply of all towns in the state over 2,000 was begun in January. During that month 748 inspections were made and 75 towns and cities were visited. Thirteen cities with a population of 10,000 or over were included in January. Out of 393 samples of milk inspected 34 were found to be below standard. Out of 34 samples of cream, 6 were found below standard. From these figures it is estimated that 8.65 per cent. of the milk sold in the larger cities is below standard. The report covering the state is expected to be the most complete survey of the milk supply of a state yet made.

Hospital Notes.—Douglas County Medical Association has entered on a work which, if carried out as proposed, will accumulate about $8,000 a year toward the building of a county hospital. This plan is to have all the county work turned over to the association, which will be responsible for all treatment and will also guarantee that the usual fees and charges will be devoted to the accumulative fund ultimately to be used in the erection of a county hospital.——The establishment of the Salina Clinic was announced February 22. It will occupy a suite of rooms in the Nesmith Building and the staff includes Drs. Edgar J. Lutz, Louis O. Nordstrom, John W. Neptune and William E. Mowery.

KENTUCKY

Hospital Opens Clinical Research Laboratory.—The medical staff of the Louisville Jewish Hospital has opened a clinical research laboratory on the first floor of the main building. The laboratory is under the charge of Dr. Leon K. Baldauf as director.

Rabies.—According to the *Kentucky Medical Journal* for March rabies is unusually prevalent in the state. Four persons have died of the disease in the past three months—two in Trigg County, one in Owen and one in Caldwell. Muzzling of dogs and a relentless war against homeless canines are recommended.

Personal.—Misses Loraine Sigmier and Alice Hayden, assistants under Dr. Lillian H. South, Bowling Green, in the state laboratory since its opening, have been appointed by the Rockefeller commission to have charge of the public health exhibit and demonstrations at the Panama exposition. The exhibit is to be found in the Palace of Education.

Hazelwood Soon to Reopen.—It is announced by the Louisville Antituberculosis Association that the Hazelwood Sanatorium will be reopened April 1. The association will be assisted in the medical work by a medical advisory board of twenty physicians of which Dr. Ap Morgan Vance, Louisville, is chairman. There will be no residence requirements for admission, but patients will be accepted from any part of Kentucky, limited only by the capacity of the institution.

MARYLAND

Health Exhibit for Negroes.—A health exhibit having as its chief purpose the arousing of negroes in the fight against tuberculosis among their own people, was held March 24 to 26, by the Maryland Colored Health Association, under the auspices of the Committee on Public Instruction of the Medical and Chirurgical Faculty of Maryland.

Art Gift to Johns Hopkins.—The Jonathan Hutchinson collection of original drawings, colored plates and photographs, illustrating clinical work in medicine and surgery and constituting one of the rarest collections known to physicians, secured by Sir William Osler, has been presented to Johns Hopkins Medical School by William A. Marburg.

Society Meets at Urologic Institute.—A meeting of the Baltimore County Medical Society was held March 17, at the James Buchanan Brady Urological Institute, Johns Hopkins Hospital, and was entertained at luncheon by Dr. Hugh H. Young, director of the institute. Later the members were escorted through the new building and were present at a clinic held by Dr. Young, who was assisted by Dr. John T. Geraghty, Baltimore.

County Sanitation Committee Organized.—The committee on sanitation of the Confederated Civic Association of Baltimore County organized March 19. Dr. J. Carroll Monmonier, Jr., Catonsville, was elected chairman, and chairmen of the subcommittees were elected as follows: Dr. Albert L. Wilkinson, Raspeburg, public instruction; Dr. William J. Todd, Mt. Washington, sewerage and water supply, and Dr. Fred V. Beitler, Halethorp, sanitary legislation.

Personal.—In recognition of his long and faithful service at the Baltimore Eye, Ear and Throat Hospital, Dr. Jacob H. Hartman, one of the two living founders of the institution, was given a banquet recently at the Hotel Rennert, at which a handsome silver service was presented him by the staff of the hospital.——Dr. Clapham P. King, a Maryland surgeon who is with the Red Cross forces in Serbia, is convalescing after an attack of typhus.

MASSACHUSETTS

Personal.—Dr. Frank B. Mallory has been appointed consulting pathologist to the Boston Dispensary.——Dr. Charles P. Hooker, Springfield, after thirty years of service, has resigned as physician to the Hampden County jail.

Cutter Lecture.—The Cutter Lecture on preventive medicine given annually under a bequest of Dr. John Clarence Cutter, will be delivered on April 2, at Harvard Medical School, by Surgeon Joseph Goldberger, U. S. P. H. S., on "Diet and Pellagra."

Dilatory Municipalities Warned.—Notice has been served on thirty cities and towns of Massachusetts by Dr. Allen A. McLaughlin, state commissioner of health, that they must at once comply with the law which provides that cities and towns of 10,000 population and over shall establish and maintain tuberculosis dispensaries satisfactory to the State Board of Health.

MICHIGAN

Leper Dead.—Sears Goldstein, a leper of Benton Harbor, who has been in the care of Berrien County for eighteen months, died February 22.

Business Bureau Organized by Physicians.—The Detroit Physicians' Business Bureau has been organized as an adjunct of the Wayne County Medical Association. The board of control is composed of Drs. James E. Davis, Raymond L. Clark, Howard W. Peirce, Walter D. Ford and William H. Diebel.

Personal.—Dr. J. Walter Vaughan has succeeded Dr. Charles H. Oakman as a member of the Detroit Board of Health.——Dr. Robert H. Haskell, Ann Arbor, has been appointed superintendent of the Ionia City Hospital, succeeding Dr. Oscar R. Long, deceased.——The residence of Dr. Carl A. Mitchell, Benton Harbor, was damaged by fire, March 11, to the extent of $2,000.

New Hospital for Detroit.—Drs. J. N. E. Taylor and Frank J. Sladen have recently visited Johns Hopkins Hospital to study hospital arrangements and consult with Dr. Winford H. Smith, Baltimore. They came as representatives of Mr. Henry Ford who has expressed an intention of building a general hospital in Detroit. It is proposed to have Drs. Harry W. Plaggemeyer, Carl R. Meloy and Ernest K. Cullen, all of Detroit, on the staff of the proposed hospital.

MINNESOTA

Inspection of Food Handlers.—It is reported that the Minnesota Public Health Association has endorsed a plan for the physical examination of all food handlers, to eliminate those suffering from infectious diseases. This would include food factory hands, cooks, waiters, bakers and even cooks in the home. A bill is now before the legislature to license professional cooks.

MISSISSIPPI

Personal.—Dr. Walter Crawford, Hattiesburg, has arranged for the enlargement of the South Mississippi Infirmary by the addition of ten rooms.——Dr. Willis Walley, chief sanitary inspector of the State Board of Health, charged with having tried to influence the granting of a temporary license to an applicant who had failed on examination, was exonerated at a meeting of the board, March 9.

MISSOURI

St. Louis

Tuberculosis Exhibit Opened.—The St. Louis Society for the Relief and Prevention of Tuberculosis has opened an exhibit at 521 Olive Street. The exhibit includes screens showing the housing conditions in the congested district, the manner in which tuberculosis is contracted and spread, the

method of its treatment by the corps of visiting nurses of the society and, in addition, each evening, a short talk is given illustrated by stereopticon views.

Fatherless Children in St. Louis.—A report issued by the St. Louis School of Social Economy presents a study of illegitimacy in St. Louis by George B. Mangold and Louis R. Essex. Missouri has no bastardy law and the whole burden of expense of illegitimacy falls on the mother. The age of consent is 15. It was found that St. Louis has a greater percentage of illegitimate births than any other city in the United States except Washington, D. C. As in the case of Washington, the large negro population is largely responsible for this. Over 20 per cent. of mothers are under 18 and about 58 per cent. under 21, with 42 per cent. over 21. The illegitimate children number 750 to 775 each year. The report recommends that the age of consent be raised to 18, that a bastardy law be enacted, that counties in which the mothers reside may be charged with the expense of confinement elsewhere, that women with their children may be returned to the state of their residence and that maternity homes be subjected to state supervision. The report also recommends further study of the subject.

University to Dedicate New Buildings.—The dedicatory exercises of the new buildings of the Washington University Medical School will be held April 29 and 30. The exercises include, in addition to the various entertainments, addresses by the dean of the medical school, Dr. Eugene Lindsay Opie; by Dr. William Henry Welch, Baltimore, of Johns Hopkins University; President Abbott Lawrence Lowell of Harvard University; President Henry Smith Pritchett of the Carnegie Foundation for the Advancement of Teaching; President George Edgar Vincent of the University of Minnesota; Drs. William Townsend Porter, Robert James Perry, Fred Towsley Murphy and George Dock of Washington University, Abraham Flexner, assistant secretary of the general education board, and Major-General William Crawford Gorgas, surgeon-general U. S. Army. On April 28, exercises in commemoration of Dr. William Beaumont will be held, including the presentation of the manuscripts and letters of William Beaumont to Washington University Medical School, the acceptance of the gift by the chancellor of the university, and addresses on "William Beaumont as a Practitioner," by Dr. Frank J. Lutz, and "William Beaumont as an Investigator," by Dr. Joseph Erlanger.

NEW YORK

Personal.—Dr. Henry A. Bray, assistant superintendent of the State Hospital, Raybrook, who has been ill for two weeks, is reported to be convalescent.——The residence of Dr. Frank B. Spengler, Baldwinsville, was destroyed by fire, March 13.

The Coroner's Bill.—The Cromwell Bill, abolishing the offices of coroner in New York County and providing for the appointment of a medical examiner with assistants of his own choosing, has been favorably reported by the senate cities committee.

Fraternity Meeting.—The annual meeting of the Syracuse University Chapter of the Alpha Omega Alpha Fraternity was held March 18. A banquet was served at the Onandaga Hotel, at which the guest of honor was Dr. Walter B. Cannon of Harvard University and in the evening Dr. Cannon delivered an address on "The Psychology of Martial Emotions."

Sanatorium Notes.—The city council of Buffalo has approved the action of the board of aldermen in requesting the mayor, comptroller and treasurer to certify to certificates of indebtedness in the J. N. Adam Hospital amounting to $22,490.36.——The supervisors of Fulton County have appointed a committee to investigate the tuberculosis hospital at Summit View. It is reported that they have accommodations for thirty patients, that only twenty are being cared for and that six on the waiting list have been refused admission.

The Jones-Tallett Bill.—This measure, designed to make the vaccination of schoolchildren compulsory only when there is a smallpox epidemic, except in cities of the first and second class, has been passed by the senate, in spite of a great deal of opposition on the part of many members of the medical profession. The Medical Society of the County of Kings, at its meeting on February 16, adopted resolutions declaring itself not in accord with the position taken by the State Department of Health, and unalterably opposed to the Tallett-Jones Bill or any bill which would, in any manner, lessen the protection by vaccination against smallpox, provided by existing law. The public health committee of the New York Academy of Medicine also passed resolutions opposing the bill in so far as it applied to New York City for the reason that present conditions in regard to vaccination were entirely satisfactory in that city and therefore should not be changed.

Annual Report of State Health Department.—Dr. Hermann M. Biggs, state commissioner of health, has transmitted the thirty-fifth annual report of the State Department of Health to Governor Whitman. The report is mainly occupied in pointing out that the department has set for itself the task of saving 25,000 lives during the next five years, that 10,000 lives might be saved annually, and that 100,000 cases of serious illness could be prevented, together with all the economic loss involved (some $30,000,000, Dr. Biggs calculates), if the state will grant the appropriation of $410,000 asked for. Dr. Biggs proposes to initiate a campaign of education for the purpose of reducing the death rate among those over 45 years of age, due to diseases of the blood vessels, heart, kidneys and brain. The increased appropriation has been asked for the purpose of carrying out the campaign of education, extending laboratory facilities for diagnosis and treatment of disease, and safeguarding the people against preventable diseases. In closing his letter Dr. Biggs says that it remains for the legislature and the executive to decide how far the citizens of the state shall have the benefits in prolonged and effective life which science and experience can give them.

New York City

Personal.—Dr. Archibald McNeil has resigned from the department of health as assistant director of laboratories and chief of the division of diagnosis, to become director of the National Pathological Laboratory.——Dr. Herbert J. Knapp of Brooklyn has sailed for Liverpool.

Movies to Teach Antifumigation.—In view of the discontinuance of formaldehyd fumigation in all of the boroughs except Brooklyn it has seemed wise to the health commissioner to explain the step by the aid of moving-picture films. The films in preparation contrast the inefficient methods of fumigation and those that are efficient and show why the old method of fumigation failed of its object.

Bathing in New York Waters Restricted.—The department of health has extended the limits within which open bathing establishments are forbidden in the waters around the city. There has been considerable protest against this measure by those owning bathing pavilions in this area. It is pointed out by the department that the step is necessary in view of the fact that 700,000,000 gallons of sewage is poured daily into New York Bay and the adjacent waters.

Cornell Professor Accepts Appointment as Biochemist.—John R. Murlin, Ph.D., assistant professor of physiology in Cornell University Medical College, has been granted a leave of absence to accept a temporary appointment as biochemist at the Pellagra Hospital of the U. S. Public Health Service, Spartanburg, S. C.——Dr. Andrew Hunter, who recently resigned as biochemist at this college, has accepted the professorship of pathological chemistry in Toronto University.

Activities of the Public Health Committee of the Academy of Medicine.—This committee has submitted a summary of its work during the months of January and February which shows that at the request of the department of education the committee has prepared a report on the teacher-mother problem in relation to health. The opinion expressed is that no woman should be permitted to teach after the sixth month of her pregnancy; that the ability of a woman to teach during this time is an individual question; that the average time of return to school work after confinement should not be less than three months; and that while healthy children might interfere very little with a teacher's work, the care of a delicate child might totally unfit her for her duties at school.——The committee has again considered the question of transfer of quarantine from the state to federal control and the past position of the Academy of Medicine has been submitted to the governor with the recommendation that as the term of the present officer of the port is expiring, the governor take immediate steps toward ceding the quarantine functions to the U. S. Public Health Service.——At the request of the department of health a report has been submitted on the relation of seating and lighting facilities in the public schools to the incidence of myopia in schoolchildren, which shows that conditions in this respect are unsatisfactory and it is recommended that a study of this question be made by the department of health and the department of education.

NORTH CAROLINA

Personal.—Dr. Watson S. Rankin, secretary of the State Board of Health, has been elected president of the Raleigh Y. M. C. A.——Dr. Frank H. Russell, Wilmington, who has been ill in a hospital in Baltimore, is reported to be improving.——Dr. George W. Long, Graham, is reported to be seriously ill in a hospital in Baltimore.

OHIO

Crile Discusses War.—Dr. George W. Crile, Cleveland, who recently returned after a tour of duty in the American Ambulance Hospital, Paris, gave an illustrated lecture in the Amasa Stone Memorial Chapel, March 17, on "Education and War."

Sanatorium Almost Filled.—The Springfield Lake Sanatorium for Tuberculosis, which was opened only a month ago with a capacity for 92 patients, has already 87 patients enrolled. When fully equipped, the institution will be able to care for 150 patients.

Free Clinic for Children at Dayton.—St. Elizabeth's Hospital, Dayton, has opened a free clinic for crippled and deformed children in connection with its department of orthopedic surgery. The clinic will be opened every Wednesday afternoon from 3 to 4 o'clock.

Addresses at State Society Meeting.—The address on medicine at the annual meeting of the Ohio State Medical Association, at Cincinnati, May 4 to 6, will be delivered by Dr. George Dock of Washington University, St. Louis, and that on surgery by Dr. Charles L. Scudder of Harvard Medical School.

Personal.—Dr. Arlington C. Holland, Columbus, has resigned as state registrar of vital statistics to take effect April 1.——Dr. Edward R. Henning, Bellefontaine, has been appointed local surgeon for the Big Four System, succeeding the late Dr. J. S. Deemy.——Dr. John W. McKemy, Dayton, has been elected vice-president of the Ohio Coroners' Association.——Dr. Lewis R. Mundhenk, Middletown, is under treatment in the Miami Valley Hospital, Dayton, for gangrene of the foot.——Dr. Tunison T. Rosendale, Fostoria, has been elected president of the Keasey Pulley Company.——Dr. Frank C. Anderson, assistant physician at the Ohio State Sanatorium, Mt. Vernon, has resigned and will be succeeded by Dr. Jay D. Thomas, Catawba.——Dr. James R. Tillotson has been elected chairman of the executive committee of the Delphos Public Health League.

Trachoma in Youngstown.—In 1914 trachoma was discovered among the employees of some of the steel mills in Youngstown. Surgeon J. W. Schereschewsky of the Public Health Service was detailed to make an investigation and reported in March, 1914. This report covered not only the incidence of trachoma among the steel workers but also covered the sanitary condition of the town and the hygienic conditions surrounding the workers in their homes and boarding places. Immediately after this, the Youngstown Sheet and Tube Company, the principal industry, arranged to open a trachoma hospital and the services of a registered nurse were secured, one being assigned from the Blind Commission of the State of Ohio. All employees found afflicted were treated in the hospital and a house to house survey of the village of East Youngstown was made. Placards warning the inhabitants of the town of the dangers of eye diseases were posted, living conditions were investigated and measures taken to improve the situation generally. From Feb. 9 to Aug. 31, 1914, 242 patients were treated in the hospital, 187 of these being employees of the company, in all 13,183 treatments were given. The hospital is now closed but the nurse and the eye specialist employed by the company continue to take care of cases of trachoma. Among the other measures adopted to improve conditions are the employment of a surgeon on full time, with an assistant, by the company, a physical examination of all persons applying for work, establishing a health board, the improvement of the water supply, installation of a sewerage system and the abolition of insanitary privies, a plan of garbage collection, regulation of overcrowding of lodging and boarding houses and the pavement of streets. A physician has been appointed as village health officer.

OREGON

Antivaccinationists in Oregon.—Under date of March 13, it is reported that a campaign against vaccination has been started in Oregon. A meeting was held in Portland, March 12, at which it is said "Dr." S. L. Shanklin of Chicago and "Dr." E. R. (Painless) Parker participated. Mrs. Lora C. Little was chairman of the meeting and she proposes to make a lecture tour of the state.

PENNSYLVANIA

Anthrax at Chester.—A case of anthrax in a young girl worker in a brush factory has been found at Chester. The disease began as a simple lesion on the face and advanced rapidly. The diagnosis was confirmed by City Bacteriologist Gary. The patient was isolated.

Cattle Disease in Chester County.—The outbreak of the foot and mouth disease in Chester County has resulted in unusual precaution near Kimberton, where forty-eight cows were ordered killed by the State Live Stock Commission. Another herd of twenty-eight cows were slaughtered, March 17, and the entire neighborhood within a radius of 10 miles has been quarantined.

Personal.—Dr. Daniel W. Jefferis, Chester, was the guest of honor at a banquet given by the Delaware County Medical Society, March 11, in celebration of the semicentennial of Dr. Jefferis' entry into the practice of medicine.——Dr. Clayton D. Fretz, Sellersville, has been elected a trustee of the Norristown State Hospital.

Connellsville Needs General Hospital.—Physicians of Connellsville are agitating the question of making the Cottage State Hospital a general institution rather than one for emergency cases. It is proposed to erect a new building on the hospital site, to be used for medical cases, and it is also suggested that a new and up-to-date operating equipment shall be secured.

Philadelphia

Personal.—Dr. W. W. Keen delivered an address on "The Contrast Between Surgery of the Civil War and That of the Present European War" before the Philadelphia County Medical Society, March 24.——Dr. W. Joseph Hearn is reported to be seriously ill at his home as the result of a cerebral hemorrhage.

Hospital Items.—Builders are estimating on a one-story brick addition at Corinthian and Girard avenues for the German Hospital.——Frankford Hospital has acquired title to property at 5000 Frankford Avenue, subject to a ground rent of $100. The lot is 26 by 125 feet and will be used for an addition to the hospital.

Nurses Home Building.—Contracts have been signed for the erection of a nurses home building on the grounds of the Philadelphia Hospital for Contagious Diseases. The building will be four stories in height, 39 by 119 feet, and will cost $52,000.——An observation building will also be erected on the grounds, one story in height, 60 by 60, to cost about $69,000.

Joint Obstetrical Meeting.—The members of the New York Obstetrical Society will be guests of the Philadelphia Obstetrical Society, April 1. The meeting will be held at the Hotel Rittenhouse and will be preceded by a dinner. During the morning and afternoon of the day of the meeting a series of clinics on obstetrics and gynecology will be given by the members of the Philadelphia Obstetrical Society.

Sanitarium Meeting.—At the annual meeting of the White Haven Sanitarium Association, Dr. Lawrence F. Flick, president, announced that owing to the condition of the finances of the treasury of the Free Hospital for Poor Consumptives and White Haven Sanitarium Association, the officials of the association have been compelled to discontinue the treatment of free tuberculous patients in the Jefferson Hospital branch at Third and Pine streets. That institution has made an appeal to the state charities for further appropriation to continue the work. Dr. Lawrence F. Flick was reelected president, Dr. Joseph Walsh, vice-president and Dr. Frank A. Craig, a director.

Postgraduate Course in Pulmonary Diagnosis.—The staff of the tuberculosis department of the Philadelphia General Hospital announces that a postgraduate course of daily instruction in pulmonary diagnosis and tuberculosis will be given beginning April 12 and ending April 30, that opportunity will be given to study cases and that members of the staff will take personal charge of the instruction from 4 to 6 p. m. daily, except Saturday and Sunday. The instructors will be Drs. Ward Brinton, A. C. Morgan, E. J. G. Beardsley and A. P. Francine. For further information and registration, Dr. Francine should be addressed at 264 South Twenty-First Street.

TENNESSEE

New Clinic at Nashville.—A new home for a free clinic at North Nashville, operated under the auspices of the Nashville Parent-Teachers' Association, was opened February 26.

Campaign Against Hookworm.—The State Board of Health announces a three-week dispensary campaign against hookworm in McNairy County. The campaign commenced March 16 and is being carried on at the following places: Ramer, Stantonville, McNairy, Bethel Springs and Selmer.

Prison Hospital for Consumptives.—Victims at the State Penitentiary who are suffering from tuberculosis are to have hospital accommodations provided for them on the state property. The old Baxter Building on the state farm is admirably adapted for this purpose and is to be remodeled and will accommodate from 75 to 100 patients.

Personal.—Dr. R. M. Kirby-Smith, Sewanee, who has been in charge of two units of the American Red Cross at Paris, has volunteered for service at Saloniki, Greece, and has been detailed for work there.——Dr. J. Owsley Manier, Nashville, has been designated to attend United States prisoners at the Davidson County Jail, succeeding Dr. Garland F. Cummins.

Addition to Sanatorium.—An addition to the Nashville City and Davidson County Hospital for Tuberculosis near Nashville has been decided on by the hospital board. The new building to be erected on the grounds of the present hospital will cost about $50,000 and will provide for more than sixty patients. The building is expected to be ready for occupancy late in the spring.

CANADA

Antityphoid Vaccination on Canadian Pacific.—For some time the Canadian Pacific Railway has been furnishing antityphoid vaccine to all employees on the western lines who would consent to take it. In 1914, 11,772 employees were inoculated, of whom only four afterward contracted typhoid fever, with one fatal result. Among those not inoculated sixty-two cases occurred in camps, nine of them proving fatal. On the Alberta division eleven cases of typhoid developed at Calgary among thirty-five men who had refused to be vaccinated.

Personal.—Dr. Walter S. Downham, London, has been appointed temporary assistant medical officer of health to Dr. Theophilius V. Hutchinson.——Dr. Frank S. Keele has been appointed medical officer of health of Portage la Prairie, Man., in succession to Dr. Albert E. Walkey.——Dr. A. E. Kelly has been appointed medical officer of health for Swift Current, Sask.——Dr. Richard A. Reeve, professor of ophthalmology in the University of Toronto, has been made professor emeritus.——Dr. Angus A. McLellan, Summerside, P. E. I., fell from a street car in Montreal, March 13, and is now lying unconscious and in a critical condition at the Western Hospital.

Chiropractors Denied Recognition.—Through the medium of a private bill in the Ontario legislature, the chiropractors asked for public recognition and power to establish a training college. They did not, however, get very far forward in their desires. When the proposed measure came before the private bills committee, it received scant encouragement from two or three members of that body, while many objected strongly to the establishment of any more so-called medical colleges. The government turned a deaf ear to all solicitations in behalf of the measure, and stated its policy was antagonistic to the establishment of any more medical colleges of any description in the province. Mention was made of the promised commission on medical education and medical practice, but although the government reaffirmed its decision to appoint such a commission, no definite time could be set for the appointment at present. The chiropractors now state that they will await the establishment of the commission and make any representations they would have to make before that body.

University of Toronto Base Hospital Staff Selected.—This hospital is to be called No. 4 General Hospital, and is furnished by the University of Toronto to the War Office; administrative staff, Lieut.-Col. James A. Roberts, commandant; Major William B. Hendry, second in command; Capt. Norman J. L. Yellowlees. Surgical staff, Drs. Alexander Primrose, Frederick N. G. Starr, P. Walter H. McKeown, equal rank; Drs. William J. O. Malloch, E. Stanley Ryerson, George E. Wilson, Robert E. Gaby, Frederick E. Watts, John G. Gallie, Harold M. Wookey. Drs. Frederick W. Marlow and Prof. B. P. Watson may be added to these. Medical staff, Drs. Andrew R. Gordon and Graham Chambers of equal rank; Drs. Donald McGillivray, Harold C. Parsons, David King Smith, Charles S. McVicar, George F. Boyer, F. R. D. Hewitt, R. G. Armour, John H. McPhedran. Nose and throat, Dr. Gilbert Royce. Eye and ear, Dr. William H. Lowry, Guelph, Ont. Genito-Urinary, Dr. Robert Pearse. Sanitation, Prof. John A. Amyot. Laboratory staff, Drs. Duncan A. L. Graham, Noble C. Sharpe, Andrew A. Fletcher, Cyril G. Imrie, London. Dental staff, Dr. George Dow.

Canadian Doctors for Servia.—Some time ago Sir Lomer Gouin, premier of Quebec, received a letter from the Servian Royal Legation in London, England, asking for volunteers from the Canadian profession to attend the Servian wounded. The following have volunteered for service with the Servian troops: Drs. Albert Paling, Winnipeg; J. M. Casserly, St. Thomas, Ont.; W. J. McAllister, Calgary; A. W. M. Leclair, Letellier, Man.; Oliver S. Waugh, Winnipeg; Donald C. Hart, Kipling Station, Sask.; Arthur Macaan, Birtle, Man.; Robert L. Hutton, Rosthern, Sask.; J. Hetherington, Carlvale, Sask.; Thomas H. Smith, North Sydney, N. S.; James Peake, Winnipeg; William A. Dymond, Yarmouth, N. S.; Alex. Osmanley, Toronto; W. P. Markasee, Springhill, N. S.; Oscar A. Cannon, Stratford, Ont.; A. H. Bowen, London, Ont.; D. E. Scott, London, Ont.; J. V. Brandon, Winnipeg; L. Zealand, Winnipeg; James M. Baxter, Chatham, N. B.; William B. McVey, St. John, N. B.; G. Degrys, Abenakis Springs, Que.; Alfred Whitmore, Cabri, Sask.; Victor Bourgeault, Marcelin, Sask.; C. M. Keiller, London, Ont.; G. Edward Duncan, Vernon, B. C.; Melville F. Lucas, Drydent, Ont.; J. Murray, Winnipeg; P. A. Guay, South Shipshaw, Que.; E. E. Robrabough, Sanford, Man.; Ben A. Hopkins, Blaine Lake, Sask.; J. B. MacKay, Kitscoty, Alta.

GENERAL

Society of American Bacteriologists to Meet.—The council of the Society of American Bacteriologists will hold a special meeting in San Francisco, Aug. 3-5, 1915. Dr. Wilfred H. Manwaring, Stanford University, California, is the local chairman.

New Officers of Biologic Chemists' Society.—At the annual meeting of the American Society of Biologic Chemists the following officers were elected: president, Dr. Walter Jones, Baltimore; secretary, Dr. P. A. Shaffer, St. Louis. The next meeting will be held in Boston, Dec. 27 to 30, 1915.

American Pediatric Society Meeting.—The American Pediatric Society will hold its 1915 meeting May 24-26 at Lakewood, N. J. The headquarters will be at the Laurel House. The society was scheduled to meet at Cape May, but as the hotels at that place will not be open at the time set for the meeting, the change was made. An interesting feature of the meeting will be the report of the Committee on Child Labor in cooperation with the Federal Children's Bureau.

The Campaign Against Malaria.—In the campaign against malaria in the South Surgeon Rudolph H. von Ezdorf, U. S. P. H. S., from his headquarters at Mobile has sent out cards to physicians all over the malarial territory asking for information as to the prevalence of the disease. The idea is to get accurate information as to the incidence of the disease and its geographic distribution. Negative as well as positive replies are desired. It is the intention to collect information on the malarial situation by sending out cards each month.

Vaccination of Government Employees.—The Secretary of the Treasury has issued an announcement that hereafter civil employees of the federal government, whose duties require them to perform interstate travel or who are regularly engaged in the handling of mail or other material in interstate traffic, may receive vaccination against smallpox or typhoid fever without cost. They will apply to persons designated by the Public Health Service for vaccination.

The Rockefeller Foundation Enters China.—The Rockefeller Foundation announces that it has decided to undertake a comprehensive plan for the improvement of medical and hospital conditions in China. For this purpose it has established the China Medical Board of the Rockefeller Foundation, the plans of which include aid for the two or more medical schools in China which are, at present, inadequately equipped; the strengthening of the staff in the mission and other hospitals; assistance in the establishment of modern tuberculosis hospitals and the establishment of six traveling scholarships of $1,000 each to enable Chinese graduates in medicine to prosecute further study abroad and of five scholarships to enable Chinese nurses to obtain train-

ing in this country. This action of the foundation is based on the report of its special commission which has made during the last year a first-hand exhaustive study of the medical needs of China.

For Mine Surgeon.—A competitive examination for the position of mine surgeon in the Pittsburgh Bureau of Mines is announced by the United States Civil Service Commission to take place April 20, 1915. The position will pay from $2,400 to $2,700. Those passing the examination will be eligible for appointment to other similar positions as vacancies occur. The duties of the person appointed to the position named will be to travel with the mine rescue cars and make physical examinations of all applicants for mine-rescue and first-aid training; to aid in improving the technic of first-aid methods; to enter mines after fires and explosions for the purpose of taking blood samples and making other physical examinations of the victims before their removal; to examine miners for the effect of their occupation on health; to examine into the sanitary and hygienic conditions in and about mines and mine villages, etc. Competitors will not be assembled for examination, but will be rated on education, experience, publications or thesis. Graduation from an approved medical school and two years' medical and surgical experience are required of applicants, who must be under 45 and must be citizens of the United States. Complete information can be obtained from the U. S. Civil Service Commission, Washington, D. C.

To Combat Typhus Fever.—An American sanitary commission has been organized under the auspices of the American Red Cross and the Rockefeller Foundation to aid in the control and suppression of typhus fever which is said to have claimed 60,000 victims in Serbia. The American Red Cross announces that $50,000 has been furnished for the carrying on of this work. The commission consists of Drs. Richard P. Strong, Andrew W. Sellers, George C. Shattuck and Francis B. Grinnell, Boston; Thomas W. Jackson, Spartanburg, S. C., and Hans Zinsser, New York. Mr. Charles S. Eby of Washington is secretary of the commission, and two sanitary inspectors are also engaged in the work.—— The Rockefeller Foundation has made a contribution of $25,000 toward the cost of sending a special sanitary commission to Serbia.——Mr. Ernest Bicknell, secretary of the American Red Cross, and Henry James, Jr., of the War Relief Commission of the Rockefeller Foundation, have returned to London after an inspection in Serbia. They report that typhus fever has already caused the death of sixty out of 400 native physicians of the country; that two American units and one British unit of the Red Cross have been compelled to suspend their regular work because of the disease, and that nine American nurses and two physicians have contracted typhus.——Two American physicians have already been reported as having died from typhus in Serbia.

FOREIGN

News from Foreign Exchanges.—The *Annales de Gynécologie et d'Obstétrique* for July was received at this office, March 16, with an apology from the publishers for the delay, owing to the mobilization. They state further that during 1915 they will issue six numbers of the *Annales* which will complete the volume of twelve numbers to which the subscribers are entitled. The years 1914 and 1915 will thus form a single volume. Many of our German exchanges are published by the "zwanglos" method, that is, they appear irregularly as material accumulates without regard to any special date or time limit. This has the advantage that there is no temptation to pad out the periodical with inferior matter, as might possibly occur if it had to appear at a certain date. The subscribers pay by the volume for these "zwanglos" publications; sometimes all the numbers of the volume are received within six weeks or not within as many months or even years. They cannot be called "journals" or "periodicals," and generally are published as "Archives," "Beiträge" or "Mitteilungen." This method of publication enables the publishers to wait tranquilly now until the war clouds have passed over, if need be. The ones devoted to surgery, however, are coming with unwonted frequency, the articles, and quality of the illustrations and paper giving no hint that a war is in progress. All our foreign exchanges have been received with surprising regularity during the last five months as is readily apparent in our Foreign Current Literature Department. Occasionally a number is delayed and arrives with later issues, but as a whole the mail service for second class matter has not been demoralized by the war to date.

WAR NOTES

Unit Sails for Russia.—An American Red Cross unit for work behind the Russian lines at Kiev, Russia, in charge of Major Harry Hamilton Snively, M. C., Ohio N. G., Columbus, sailed for Europe on the *Bergensfjord*, March 22. Eleven nurses sailed on the same steamer.

Philadelphia Ward in the American Ambulance Hospital.—The $15,000 necessary to open the Philadelphia ward of forty beds in the American Ambulance Hospital, Paris, and to maintain the ward for six months, has been exceeded by more than $8,000, and in addition five individuals have offered to duplicate their subscriptions, amounting in all to about $1,800, if it should be necessary to keep the ward open for a second period of six months. The staff from the University of Pennsylvania will take charge of an entire floor of the institution during the months of July, August and September, following the Harvard Medical School contingent.

Efficacy of Preventive Inoculations. — Our German exchanges state that the inoculations of the troops against typhoid and cholera have proved most gratifyingly effectual. No epidemics of either have occurred among the troops. The spread of typhus from the Russian prisoners is prevented by their strict isolation. Several deaths have occurred among the German physicians who have had charge of the Russian prisoners, the latest victim being Prof. von Prowazek, a collaborator with Schaudinn and his successor at Hamburg, a prominent research worker on protozoa and the physiology of the first forms of living matter. He had made typhus a special study in recent years, and has now fallen a victim to it, at the same camp where Jochmann acquired it. An official order now requires all cars returning from Russia to be placarded "Aus Russland! Seuchenverdacht! Before used again thoroughly sterilize and unlouse!" No upholstered cars are allowed to be sent on the lines into Poland or Russia.

Aid for Belgian Physicians.—The report of the treasurer of the committee of American physicians for the aid of the Belgian profession for the week ending March 20, 1915, lists the following contributions:

Sebastian Co. Medical Society, Fort Smith, Ark.	$ 15.00
Dr. F. W. Johnson, Boston, Mass.	25.00
Dr. E. P. Quain, Bismarck, N. Dak.	10.00
Dr. N. O. Ramstad, Bismarck, N. Dak.	10.00
Dr. Haven Emerson, New York, N. Y.	15.00
Dr. Edward B. Angell, Rochester, N. Y.	10.00
Dr. T. A. Davis, Chicago, Ill.	25.00
New Bedford Medical Society, New Bedford, Mass.	50.00
Dr. Newton B. Waller, New York, N. Y.	5.00
Dr. Charles G. Eicher, McKees Rocks, Pa.	5.00
Dr. William H. Perry, Sterling, Ill.	5.00
Dr. Frederick A. Spafford, Flandreau, S. Dak.	10.00
Dr. George L. Johnson, Newfolden, Minn.	5.00
Salt Lake Co. Med. Soc., Salt Lake City, Utah	100.50
Dr. and Mrs. Clem D. McCoy, Kenton, Ohio	50.00
Dr. E. A. Weiss, Pittsburgh, Pa.	10.00
Dr. Hubert Claytor, Hopkins, S. C.	5.00
Dr. C. E. Goodman, Virginia, Minn.	5.00
Tri-County Med. Soc., Copiah-Lincoln-Pike Counties, Miss.	10.00
Dr. Harold W. Dana, Boston, Mass.	25.00
Receipts for the week ending March 20	$ 391.50
Previously reported receipts	4,830.00
Total receipts	$ 5,221.50
Previously reported disbursements	
1,625 standard boxes of food @ $2.20	$ 3,575.00
542 standard boxes of food @ 2.30	1,246.60
Disbursements for the week ending March 20	
173 standard boxes of food @ $2.30	$ 397.90
Total disbursements	$ 5,219.50
Balance	$ 2.00

F. F. SIMPSON, Treasurer,
5 Jenkins Arcade Bldg., Pittsburgh, Pa.

"The Commission for Relief in Belgium, according to Mr. Bates, its vice-chairman, was granted by the German government not only the sole right to transport food into Belgium but given the active sympathy and aid of the German military authorities. Despite reports to the contrary, not one pound of food sent in has been appropriated."

The contributions made by American doctors, through the Committee of American Physicians for the Aid of the Belgian Profession, are placed in the hands of the above commission, for distribution among the members of the Belgian profession and their families.

Hon. Brand Whitlock, American minister at Brussels, is credited with saying on March 17, that the food then in Belgium would not last longer than April 1.

Red Cross Shipments.—The American Red Cross has recently made a number of heavy shipments of medical and

surgical relief supplies to the foreign Red Cross organizations, including 286 cases to the Serbian Red Cross, 42 cases to Dr. Ethan Flagg Butler of the American Red Cross at Gevgalia, Serbia, 380 cases and boxes to the Austria-Hungarian Red Cross at Vienna, 236 cases to the British Red Cross, London, and 27 cases to Dr. Howard F. Beal of the American Red Cross at the American Hospital, Paignton. ——Prince Henry of the Netherlands has acknowledged receipt of a check for $5,000 from the American Red Cross for use in the Netherland Red Cross for European war relief work.——The Belgian government also acknowledged receipt of $6,000 lately contributed to the Belgian Red Cross by the American Red Cross.——Dr. Henry Van Dyke, American minister to the Netherlands, has acknowledged receipt of 325 boxes of hospital supplies forwarded by the American Red Cross on the *Aymeric* for the German Red Cross, and also of 200 boxes of supplies for Belgian relief work shipped by the same steamer.——Red Cross supplies are being transported free of charge by all the railways of the Netherlands.

Physicians Urgently Needed in Serbia.—The *Presse Médicale* of March 4 publishes an official notice from the minister of war addressed to the chief of the medical department of the military district, including Paris. It is headed "Urgent," and announces that the government of Serbia finding itself powerless to combat the epidemics of exanthematous typhus, smallpox and relapsing fever, which are ravaging the Serbian army and the civilian population, has just issued a pressing appeal to the allied powers begging each to send her a hundred physicians. The minister of war adds: "I am extremely anxious that the French army shall respond at once to this urgent appeal." He enumerates further the positions and salaries offered those who will go. Each army medical officer will be given the rank the step above the one he has in his own army, and the emoluments to correspond will be computed from the day he sets sail for Serbia from Marseilles. The various salaries are specified in turn, the highest being 1,200 francs, with a daily allowance of 10 francs. The minister of war asks to be informed at the earliest possible moment of all those French army medical officers who are willing to be detached for service in Serbia.

LONDON LETTER

LONDON, March 5, 1915.

Overprescribing by Panel Physicians

In a previous letter to THE JOURNAL a grave defect in the working of the insurance act, arising from its socialistic nature, was pointed out—excessive sickness claims. A similar defect due to the same cause has arisen in connection with the drug fund. In the London district the fund shows a deficiency of $260,000, about 27.5 per cent. As drugs are supplied by the state, physicians have no interest in economy and some have been guilty of great extravagance. In certain cases wherein very expensive drugs have been ordered, physicians have been asked to give an explanation, and failing a satisfactory one, have been charged with the expense; but this is not a sufficient check. Speaking at a meeting of the London Insurance Committee, the pharmacists' representative said that if the prescribing had been at all reasonable, the fund would have been sufficient. The trouble was due to a certain number of physicians.

The position at the great manufacturing town of Salford is instructive. The system of payment per head for the insured, which is in vogue in most parts of the country, has not been adopted there. The whole of the panel fund is pooled, and the physicians are paid out of it at an agreed rate per visit or consultation so far as the pool suffices. Up to the present it has sufficed only to pay about two thirds of the doctors' accounts. The pharmacists are in no better position, and owing to their dissatisfaction and the charges leveled against the physicians of general overprescribing in 1913, a somewhat novel method was adopted at the beginning of 1914. The whole of the drug fund of 50 cents per insured person was credited to the panel physicians' pool, and, on the other hand, each panel physician was debited with the cost of the prescriptions given by himself. The pharmacists were in any case assured of at least 36 but not more than 48 cents per insured person in the aggregate. In this way, while the aggregate sum available for the pharmacists would not be affected, an individual responsibility would be thrown on each panel physician for his own prescriptions. The result was striking. The pharmacists' accounts fell nearly to one half. But the Insurance Committee was far from satisfied with this result, and suggested that the insured were not getting the medicines they should. Thus the administrators of the insurance act are in a dilemma. If the physicians are not interested in the cost of drugs, they are considered guilty of extravagance; if they are interested, they are considered to stint the insured!

The Prohibition of the Sale of Infected Shellfish

The local Government Board has issued an order requiring sanitary authorities to make regulations prohibiting the sale of shellfish liable to cause danger to public health. The order gives power to the sanitary authority of a district in which shellfish layings are situated to close any layings in regard to which there is evidence that shellfish from such layings have actually caused infection or other danger, or are liable to be a source of danger to public health. The health officer of such a district is instructed to examine the conditions of the layings and to report to the local authority any case in which they are so situated as to be liable to dangerous contamination, with a view to steps being taken under the regulations to prevent shellfish being distributed for sale for human consumption from such layings unless relaid in fresh water for a period sufficient to free them from contamination; the period suggested is not less than a fortnight. The board advises that any action taken with a view to the closing of a laying should be based rather on epidemiologic and topographic considerations than on the results of bacteriologic examination. The order requires a sanitary authority of a district in which layings are situated to take action on receipt of a representation from another local authority in whose district the shellfish are consumed. If the local authority where the layings are fails to act, the local authority complaining will have an appeal to the Local Government Board.

The Testimonials of a Nostrum

The ways of the patent medicine man are curious, if not edifying, and display extraordinary variety. The proprietors of a preparation called "Winox" have adopted a new method of obtaining testimonials from the profession—paying magnificently for them. They claim that their preparation is not secret, as "the full analysis is printed on every bottle, the alcohol in Winox is equivalent to that in well matured port wine; the extract of beef and malt used contains 35 pounds of English meat and 11 pounds of malt." The usual method of obtaining testimonials, which is sometimes successful, is to send broadcast to physicians free samples for purposes of trial. The proprietors of Winox have taken a new departure. They offer to pay generously—$15 for a report on the results of three or more cases. Their announcement is candor itself. They do not require or expect that all these trials will be favorable—"Winox is no panacea, but from the reports we send you we feel confident that a large majority of such trials must be satisfactory and on these grounds will pay for all without distinction." It is not surprising that they have succeeded in obtaining a number of testimonials, but these mostly take the form of saying that such and such a patient took Winox when ill and recovered!

A Judge and Professional Secrecy

In this country a physician has no privilege at law to avoid disclosing information acquired in his professional capacity. Like a great deal in our procedures, practice is governed by precedent and not by set rules. If a physician refuses to answer a question on the ground of professional confidence, the judge can at his discretion commit him to prison for contempt of court. In the rules laid down in ethical text-books for the guidance of physicians, it is pointed out that it rests with them to a great extent whether any one shall know whether they have information to give, and that in cases of crime they are neither expected, on the one hand, to act as detectives, nor, on the other, are they sheltered from blame if by their silence they aid crime. They are also told that, generally speaking, they are bound to silence in the interests of their patients. In the absence of any definite rule, difficulties naturally arise. The following is a recent example: A woman underwent operation for the production of abortion. Three physicians subsequently attended her in succession, and to one she confided the name of the operator. She died without any deposition being taken or any statement being made on her death bed which could be used as evidence in a court. Among her papers was found a letter making an appointment with a woman, who was arrested and charged with the crime. At the trial the judge pointed out that any statement made by the deceased to a physician was not evidence in the legal sense. He

directed the grand jury (which in this country holds a preliminary investigation before a prisoner is brought to trial) not to find a "true bill." He said that the law provides in case of a person who is seriously ill or who in the opinion of a physician is not likely to recover, that the evidence of such a person may be taken by a magistrate. Under the present circumstances, it was the duty of the physician to communicate with the police so that steps could be taken for the administration of justice. No one would desire to disturb the confidential relation between the physician and his patient, but there were cases in which the desire to preserve that confidence should be subordinated to the duty cast on every good citizen to assist in the investigation of crime. Here as the woman was likely to die and her evidence likely to be lost, it was the duty of the physician to communicate with the police. The judge added that he was moved to make these observations because an opinion to which he was a party had been given twenty years before when he was at the bar and had been either misunderstood or misrepresented in a text-book on medical ethics. Commenting on the judge's remarks, the *Lancet* "doubts if there will be any general agreement in the medical profession with his views." Returning to the subject in a leading article in a subsequent issue, our contemporary protests against the view that it is the physician's duty to violate professional confidence in circumstances which are not absolutely compelling. The keeping of the patient's secret, whether a guilty one or not, is a point of professional honor. The function of the physician is to save life, not to act the part of a detective. The revelation of patients' secrets would diminish or destroy all trust in the profession, and cause patients to seek treatment by the unqualified. The physician should discharge the duty of bringing a criminal to justice by every legitimate means. He should use his influence to obtain the patient's consent to this course. But if she refuses he should not set the law in motion except under the most unusual circumstances. It is noteworthy that a celebrated criminal judge, the late Lord Brampton, once expressed an opinion diametrically opposite to that of the judge in the present case. The moral of it all seems to be that English law is chaotic and badly in want of some system of codification, such as the Code Napoléon.

PARIS LETTER

PARIS, March, 4, 1915.

The War

EXCHANGE OF WOUNDED SOLDIERS

An agreement has been made between the French and German governments with regard to the exchange of wounded soldiers who are unfit for further military service. The French and German governments have communicated the agreement to the Swiss federal council, and the physician in chief of the Swiss Red Cross, Colonel Bohny, has gone to Constance to arrange with the German authorities for the transportation of these wounded soldiers. Transportation will be effected by the Swiss Red Cross in sanitary trains put at its disposition by the administration of the Swiss army. Each train is under military authority and will carry 250 wounded who will be cared for during transit by nurses and members of Red Cross units. A train will go in each direction every two days. The number of French wounded to be sent home is about 2,500.

THE MEDICAL SERVICES AND THE CIVIL POPULATION

Public opinion is much concerned with the situation, from the medical point of view, of the civil population in certain zones of the country. M. Millerand, minister of war, after a conference with M. Malvy, the minister of the interior, has taken steps to relieve the situation of zones completely deprived of physicians and pharmacists. Whenever such a situation is reported by the prefect of a department, the director of the health service in that region is to see that all imperative necessities shall be satisfied by the physicians and pharmacists at the disposal of military authorities. So far as pharmacists are concerned, the attempt will be made so far as possible, in every locality where a pharmacist is lacking, to send back to his own laboratory a pharmacist who comes from the locality.

MEDICAL MISSION IN SERBIA

The Serbian government, finding itself unable to combat the epidemics of exanthematic typhus, smallpox and relapsing fever which are raging in the Serbian army and among the civil population, has presented a pressing request for a hundred physicians from each of the allied powers. Our minister of war attaches great importance to a satisfactory response from the French army to this appeal. Special privileges will be granted to military physicians to consent to be detached for service in Serbia: In particular, they will have in the Serbian army a higher grade than that which they held in the French army.

PHOSPHORUS IN WOUNDS PRODUCED BY GERMAN ARTILLERY PROJECTILES

At one of the last sessions of the Société de biologie, M. Victor Henri, maitre de conférences at the Sorbonne, called attention to the fact that wounds produced by shrapnel ball and fragments of German shells may contain phosphorus. The presence of this element, even in very small quantities, may have an important effect, producing a mortification of tissues in which anaerobic microbes easily develop. It is possible that the great majority of cases of suppurating wounds, tetanus and gaseous gangrene are due to the introduction of phosphorus by shrapnel and fragments of shell.

WOUNDS OF THE EXTERNAL GENITAL ORGANS

Dr. E. Delorme, medical inspector general of the military health service since the beginning of the war, has been impressed by the relative frequency of wounds of the external genital organs. In scrotal lesions with hernias of the testicle, he advises reduction; expectant treatment, pure and simple, generally results in gangrene. Wounds of the urethra with loss of substance ultimately require dilatation, urethrotomy or urethrectomy. Tangential wounds of the perineum sometimes injure the urethra over a considerable extent. Such lesions are amenable to autoplasty. Among wounds of the penis, through and through perforations of the corpora cavernosa are observed rather frequently. The cicatricial indurations which result produce deviations.

TRAUMATIC CATARACT OF WOUNDED SOLDIERS

Should a wounded soldier affected with traumatic cataract be operated on for this condition? One of our most eminent oculists, Dr. E. Valude, replies in the negative. He believes that such a wounded soldier should be recommended for discharge or for the auxiliary service; later, after he has been freed from service, the patient will be at liberty to have such an operation performed as he desires. The operation, whether successful or not, cannot increase the military usefulness of a soldier. Whether the cataract is removed, even with the best results, or not, the wounded man is eligible for discharge or for the auxiliary service, for an eye that has been operated on, even if good vision is secured, does not contribute to binocular vision in such a manner as to insure accuracy of aim in firing. The government has, therefore, nothing to gain by incurring the responsibility of an operation, thereby perhaps becoming liable for pension if the complications following the operation make the condition of the wounded eye worse or even involve the other eye by sympathy.

Inflammation of the Parotid Glands in Typhoid Fever

An interesting discussion on this subject was held by the Société médicale des hôpitaux de Paris. Dr. P. Emile Weil has observed nine cases of parotid inflammation during the stage of crisis in serious typhoid fever. Two of these inflammations were merely fluctuating, others suppurating. The first were cured in a week, being treated merely by hot, wet compresses covered with oiled silk or other covering, renewed three times in twenty-four hours. In the seven other cases there were five deaths. The two cases of suppurating parotiditis which ended in recovery were treated by expression of the gland and repeated application of hot, moist compresses. Dr. Siredey remarked that while parotiditis is not rare in typhoid fever, it is more frequent in appendicitis. It is a frequent complication in intestinal infections. Siredey treats cases of parotiditis systematically by anointment with a salve containing one-sixth collargol, followed by hot moist dressings. Dr. Albert Mathieu has obtained rapid cures by applying compresses wet in very hot water at the tumefied point threatening suppuration. These applications, lasting from ten to twelve minutes, are repeated four times a day. Dr. Gailliard considers massage of the gland dangerous. Dr. Josué, on the other hand, believes that expression of the gland, practiced from the outset, constitutes an excellent method of treatment permitting the avoidance of a voluminous abscess. Dr. Netter, agrégé professor at the Faculté de médecine de Paris, is also in favor of glandular expression.

BERLIN LETTER

BERLIN, Feb. 16, 1915.

Experiences in the Examination of Volunteers

Dr. Siegfried Kaminer and Dr. Antonio da Silva Mello, on the basis of examinations which they have made in the Charité, divide the volunteers into four classes: 1. Those unquestionably fit for service in the field. 2. Those who are conditionally fit; that is, fit only for certain kinds of weapons. 3. Those completely unfit for service at the front. 4. Those who are not fit for service at the front as a consequence of insufficient physical development at the time of enlistment, but in whose case it is reasonable to expect that they may be made fit by physical training in a moderate time. It is not difficult for the experienced examiner to decide on those who are generally fit, as well as those who are completely unfit, but it is not so simple to determine the fitness for special kinds of weapons. In general, these cases involved those with varicose veins, flat feet and hernia, which render soldiers unfit for marching. In a second class was the important diminution of sharpness of vision, which renders soldiers unfit for marksmen. The most difficult task was the decision with regard to the class of volunteers in which fitness was to be expected after a better physical development, but during the course of the war definite normal values are difficult to establish in these matters. Still the order of service gives the general signs for a vigorous physical development: a firm elastic skin, thick neck, broad shoulders, a regularly developed chest, a well-built back, well-placed shoulder blades, strong bones, powerfully developed musculature, supple arms and legs and normal body weight. For young people who announce themselves voluntarily for military service, the smallest permissible physical demands may be established, or it may be assumed that the enthusiasm of the volunteer will make him adapted to a high degree to the difficulties and fatigues. Both physicians, however, regard the enthusiasm for war at the time of enlistment as a quantity that cannot be measured. Among 1,829 who were examined, the following results were obtained in relation to age and fitness, reckoned by percentage:

Age	Total	Fit Pr. Ct.	Conditionally Fit Pr. Ct.	At Present Unfit Pr. Ct.	Rejected Pr. Ct.
15 and under	20	40	..	60	..
16	101	55	..	39	6
17	313	48	3	37	11
18	298	61	6	24	8
19	297	65	6	18	11
20–24	359	66	10	10	14
25–29	235	79	8	..	13
30–39	168	69	14	..	17
40 and over	48	71	10	..	19
Total	1,829	63	7	18	12

Fitness for service increases in proportion to age from 16 to 40. This rise is not without importance in estimating the value of fitness for service of the members of the Landsturm. It is further interesting that general physical weakness was found among 25 per cent. of the men who had already passed their twentieth year, but in whom there were no signs of any kind of organic disease. An increased physical development in this respect in the future will give especially favorable results. Seventy per cent. of those enlisted were fit to enter the army immediately; 18 per cent. after a previous physical training, and only 12 per cent. were completely unfit. Surely this is a significant fact with reference to the fitness of our people for war. A statistic compilation, with reference to trades, gave the following figures:

Trade	Total	Fit Pr. Ct.	Conditionally Fit Pr. Ct.	At Present Unfit Pr. Ct.	Rejected Pr. Ct.
Laborers and handworkers	706	68	7	17	8
Merchants and clerks	513	58	9	17	16
Schoolboys	348	50	5	36	8
Scientists and students	250	56	10	16	17

The largest number of those eligible are found among the laborers, while those rejected were most numerous among scientists and students. Among 1,682 of those examined, it was determined whether they came from a city with over 50,000 inhabitants or from a smaller city or the country. Among 1,050 inhabitants of cities, 58 per cent. were fit, 8 per cent. were conditionally fit, 24 per cent. not at present acceptable, and 10 per cent. rejected. Among 632 inhabitants of the country listed, 58 per cent. were fit, 9 per cent. conditionally fit, 24 per cent. not yet acceptable, and 9 per cent. rejected. The percentage differs little in the two classes.

Marriages

OTHO GRANVILLE KESLING, M.D., Arlington, Wash., to Miss Leila G. Buckman of Philadelphia, in New York City, recently.

FRANK M. ECCLES, M.D., Oxford, Md., to Miss Ethel Ray Neal of Cambridge, Md., at Baltimore, March 10.

JAMES A. LEDBETTER, M.D., to Miss Myrtle Allen, both of Oakwood, Tenn., at Woodlawn, Tenn., March 5.

THEODORE H. JONES, M.D., West Hickory, Pa., to Miss Mellie Bunce of Troy Center, Pa., March 25.

MATTHEW W. CAVE, M.D., to Mrs. Carrie McLean, both of Wichita, Kan., at Dallas, Tex., March 10.

ELLERY MAY WING, M.D., to Miss Nellie Emery Porter, both of North Anson, Maine, March 15.

ROSA B. HOWLAND, M.D., Memphis, Tenn., and Mr. J. J. Hamm of Washington, D. C., March 4.

FREDERICK J. HARTER, M.D., to Mrs. Goldie Benton Boynton, both of Herkimer, N. Y., March 4.

MAYES B. WILLIAMS, M.D., to Miss Carolene Louise Hipp, both of Wheeling, W. Va., March 11.

ISAAC CHANDLER WALKER, M.D., to Miss Jessie Helen Walker, both of Boston, recently.

WALTER J. GREAVES, M.D., Biloxi, Miss., to Miss Anna P. Rice of New Orleans, March 2.

JAMES HERBERT LAWSON, M.D., to Miss Elsie Morgan, both of New York City, March 10.

JOHN PETER WYLES, M.D., to Miss Carrie Colvin, both of Cynthiana, Ky., March 10.

Deaths

Joseph Howard Raymond, M.D. Long Island College Hospital, Brooklyn, 1868; College of Physicians and Surgeons in the City of New York, 1869; of Brooklyn; from 1888 to 1903 editor of the Brooklyn Medical Journal; for forty years professor of physiology and hygiene and secretary of the faculty of his alma mater, secretary of the Hoagland Laboratory and of the Polhemus Memorial Clinic; author of "The History of the Long Island College Hospital and its Graduates," and of a textbook on physiology; formerly assistant sanitary inspector of the New York City Department of Health; during two administrations health commissioner of Brooklyn; died in the Long Island College Hospital, March 8, six days after a surgical operation on the stomach, aged 69.

Alfred Mason Amadon, M.D. Dartmouth Medical School, Hanover, N. H., 1897; of Boston; a Fellow of the American Medical Association and a specialist on diseases of the ear; formerly lecturer on otology in Harvard Medical School; assistant surgeon to the ear department of the Boston Dispensary; and senior surgeon in the ear department of the Massachusetts Charitable Eye and Ear Infirmary; consulting otologist to the Boston Floating Hospital; an author of many articles on the pathology of the ear; since 1912 a resident of the Adirondack Cottage Sanitarium, Saranac Lake, N. Y.; died in the General Hospital, Saranac Lake, March 6, aged 47.

Otris E. Herrick, M.D. Albany (N. Y.) Medical College, 1871; a Fellow of the American Medical Association and president of the Grand Rapids Academy of Medicine in 1887-88; of Grand Rapids, Mich.; for many years consulting gynecologist to St. Mark's and the Union Benevolent Association hospitals, Grand Rapids; a member of the Michigan State Board of Health in 1885; professor of gynecology in Cincinnati Medical College in 1878; and editor of the *Obstetric Gazette* from 1878 to 1882; died in the De Vore Sanatorium, Grand Rapids, March 5, from cerebral hemorrhage, aged 66.

Benjamin Avery Segur, M.D. College of Physicians and Surgeons in the City of New York, 1860; assistant surgeon of U. S. Volunteers during the Civil War; later a practitioner of Brooklyn; consulting physician to St. Peter's and St. Mary's hospitals; from 1873 to 1875 sanitary superintendent of the Brooklyn Health Department; who retired from practice in 1891; died at St. Legier Sur Verey, Switzerland, February 14, aged 81.

Theodore Gaillard Croft, M.D. Medical College of the State of South Carolina, 1875; a Fellow of the American Medical Association; president of the South Carolina Medical Association in 1901 and 1902; a Confederate veteran; for two terms trustee of his alma mater; for many years local surgeon of the Southern Railroad at Aiken, S. C.; surgeon of the First Regiment South Carolina State Troops for ten years; a member of the State Board of Medical Examiners in 1902; died in the Columbia (S. C.) Hospital, March 10, aged 60.

Waldron Burritt Vanderpoel, M.D. College of Physicians and Surgeons in the City of New York, 1879; a Fellow of the American Medical Association; and a member of the New York bar and New York Academy of Medicine; formerly a member of the staff of the De Milt Dispensary and Randall's Island Hospital; until 1904 a practitioner of New York City; died at his home in Summit, N. J., March 9, from cerebral hemorrhage, aged 60.

Gordon Beriah Hotchkin, M.D. University of Pennsylvania, Philadelphia, 1855; one of the oldest practitioners of Blair County, Pa.; surgeon of the First Pennsylvania Volunteer Cavalry throughout the Civil War; for many years surgeon of the Pennsylvania System at Huntington and Altoona, Pa.; died at his home in Altoona, March 12, a week after a fall in which he sustained a fracture of the hip, aged 81.

George Mylius Babendreier, M.D. Georgetown University, Washington, D. C., 1910; formerly of Washington, D. C.; a Fellow of the American Medical Association; one of the assistant surgeons at the Georgetown University Hospital and a member of the staff of the Washington Asylum Hospital; who had recently moved to Alpena, W. Va.; died at his home in that place, March 7, from tuberculosis, aged 27.

William Britton, M.D. University of Toronto, 1875; for fifteen years representative of his alma mater on the Council of the College of Physicians and Surgeons of Ontario and at one time president of the council; for many years a practitioner of Toronto, but for the last three years a resident of Prince Albert, Sask.; died at the home of his sister in Toronto, March 11, aged 63.

Joseph Francis Bloodgood, M.D. College of Physicians and Surgeons in the City of New York, 1884; a member of the Medical Society of the State of New York and a Fellow of the New York Academy of Medicine; visiting surgeon to the Flushing (N. Y.) Hospital and local surgeon to the Long Island Railroad; died at his home in Flushing, L. I., March 12, from pneumonia, aged 55.

John Chappell Walton, M.D. Louisville (Ky.) Medical College, 1878; formerly a Fellow of the American Medical Association; a member of the Medical Society of Virginia; local neurologist to the Southern Railway at Richmond, Va.; and owner and physician-in-charge of the Walton Sanitarium, Richmond; died in Ridgefield, N. J., March 11, aged 57.

Albert Simon Newcomb, M.D. Albany (N. Y.) Medical College, 1866; a member of the New York Academy of Medicine; formerly medical examiner for the New York Postoffice and local surgeon for the West Shore Railroad; for a time surgeon of the Twenty-Fourth Infantry, N. G., N. Y.; died at his home in Schenectady, March 1, from heart disease, aged 73.

John Calvin Cotton, M.D. Cleveland (Ohio) Medical College, 1853; for many years a practitioner of Meadville, Pa.; surgeon to the Meadville Hospital and health officer of Meadville; who retired after fifty years of practice and moved to Germantown, Philadelphia; died at his home in that place, March 10, from cerebral hemorrhage, aged 86.

Joseph Buchanan Irwin, M.D. Kentucky School of Medicine, Louisville, 1884; a member of the Medical Society of the State of Pennsylvania; for several years a member of the Washington (Pa.) City Hospital; and one time a member of the Washington Board of Education; died at his home in Florence, Pa., March 11, from pneumonia, aged 62.

William T. Davies, Jr., M.D. Medico-Chirurgical College of Philadelphia, 1897; formerly a member of the staff of the Fountain Spring State Hospital, but later a member of the resident staff of the Pennsylvania State Sanatorium for Tuberculosis, No. 1, Mont Alto; died in the latter institution, March 4, from heart disease, aged 42.

Thomas Gay Whims, M.D. University of Maryland, Baltimore, 1911; a member of the Medical Society of the State of North Carolina and a practitioner of Lasker, N. C.; died in the University Hospital, Baltimore, March 4, from sarcoma of the arm, for which two surgical operations had been performed without avail, aged 37.

Paul G. Noack, M.D. Memphis Hospital Medical College, Memphis, Tenn., 1896; a member of the Arkansas Medical Society; died at his home in Bardestown, Ark., March 9, from the effects of a gunshot wound of the head, self-inflicted, it is believed with suicidal intent, while despondent on account of ill health, aged 47.

William B. McDonald, M.D. Medical College of Indiana, Indianapolis, 1873; a Fellow of the American Medical Association; from 1874 to 1876 superintendent of the Indianapolis City Hospital and for thirty-eight years a practitioner of Indianapolis; died at his home in New Augusta, Ind., March 14, from diabetes, aged 63.

William Xavier Sudduth, M.D. Medico-Chirurgical College of Philadelphia, 1885; for many years a practitioner of Chicago, but for the last few years famous as an expert on alfalfa and a resident of Broadview, Great Falls, Mont.; died in a hotel in Roundup, Mont., March 7, aged 62.

Albert Edward Bolton, M.D. New York University, New York City, 1888; who opened the first medical mission at Port Simpson, B. C., where he labored for fifteen years; later a practitioner of Victoria and Vancouver, B. C.; died at his home in the latter city, Dec. 26, 1914, aged 52.

Annie W. Stauffer, M.D. Eclectic Medical College of the City of New York, 1881; for forty years a practitioner of Cape May, N. J., and Philadelphia; died in the Woman's Homeopathic Hospital, Philadelphia, March 3, two weeks after a fall in which she broke her leg, aged 70.

Curtiss Clark Hoyt, M.D. College of Physicians and Surgeons in the City of New York, 1887; a member of the Connecticut State Medical Society; for many years chief of the fire department of Danbury; died at his home in Bridgeport, Conn., March 5, from heart disease, aged 62.

James P. Hawes, M.D. George Washington University, Washington, D. C., 1872; of Valois, N. Y.; for fifteen years an employee of the treasury department, Washington, D. C.; died in the People's Hospital, Sayre, N. Y., February 24, from disease of the stomach, aged 75.

Will Goldsworthy, M.D. University of Minnesota, Minneapolis, 1897; formerly chief surgeon for the Duluth and Northern Minnesota Railroad at Knife River, Minn., but for the last six years a practitioner of Duluth; died at his home in that city, March 3, aged 39.

David Hyslop Hayden, M.D. Harvard Medical School, 1863; a Fellow of the Massachusetts Medical Society since 1869 and its librarian from 1872 to 1884; assistant surgeon in the Navy during the Civil War; died at his home in Lynn, February 21, aged 75.

Jacob L. Sandoe, M.D. University of Pennsylvania, Philadelphia, 1878; of Cincinnati; for twenty-five years medical examiner for the Pennsylvania Lines West of Pittsburgh; died in the Good Samaritan Hospital, Cincinnati, February 26, from pneumonia, aged 59.

Clement Dietrich O'Leary, M.D. College of Physicians and Surgeons in the City of New York, 1887; until three years ago a practitioner of Providence, R. I.; died in the Rhode Island State Sanatorium, Wallum Lake, Dec. 22, 1914, from tuberculosis, aged 48.

Albert Beekman Mills, M.D. University of Michigan, Ann Arbor, 1897; for fifteen years a member of the medical staff of the Calumet & Hecla Hospital, Calumet, Mich.; died at his home in Calumet, March 5, as the result of a nervous breakdown, aged 42.

Jules Maurice Rosenbloom, M.D. Medico-Chirurgical College of Philadelphia, 1906; of Philadelphia; a member of the Medical Society of the State of Pennsylvania; died in St. Agnes' Hospital, Philadelphia, March 8, after a surgical operation, aged 34.

Hugh L. Ray, M.D. University of Nashville, Tenn., 1881; once president of the Lauderdale County (Ala.) Medical Society; for many years a practitioner of Parker County, Tex.; died at the home of his daughter in Poolville, Tex., March 5, aged 80.

Alfred Schmitz Shadd, M.D. Trinity Medical College, Toronto, 1898; coroner of Prince Albert County, Sask.; and a practitioner of Melfort, Sask.; died in the Winnipeg (Man.) General Hospital, March 9, after an operation for appendicitis, aged 46.

William T. McCarty, M.D. College of Physicians and Surgeons, Chicago, 1902; formerly of Campbellsport, Wis.; but for ten years a practitioner of Miles City, Mont.; died

at his home in that city, February 11, from abscess of the brain, aged 39.

Henry Hersch Hart, M.D. Cooper Medical College, San Francisco, 1879; a member of the Medical Society of the State of California; of San Francisco; died suddenly from heart disease, March 5, while assisting at a surgical operation, aged 61.

John George Parrish, M.D. Missouri Medical College, St. Louis, 1872; for more than forty years a practitioner of St. Louis; a special scout in the Confederate service during the Civil War; died at his home in St. Louis, February 27, aged 72.

Gregory G. Bryan, M.D. Washington University, St. Louis, 1896; a Fellow of the American Medical Association and for five years city physician of De Soto, Mo.; died at his home in that city, January 31, from interstitial nephritis, aged 45.

John Willis Fowler, M.D. University of Michigan, Ann Arbor, 1884; of Dubuque, Ia.; at one time secretary of the Tri-State Medical Society and city physician of Dubuque; died at his home in that city, March 4, from pneumonia, aged 55.

Clarissa E. Cooke, M.D. Hahnemann Medical College, Chicago, 1896; a member of the Ohio State Medical Association and formerly a practitioner of Portsmouth, Ohio; died at her home in St. Paul, Minn., Dec. 6, 1914, aged 51.

John A. Rupp, M.D. Tulane University, New Orleans, 1900; assistant coroner of Orleans Parish, La., for more than twelve years and a resident of Algiers, La.; died at his home in that city, February 27, from pneumonia, aged 36.

David Polk Juett, M.D. Jefferson Medical College, 1857; surgeon of the Seventh Kentucky Cavalry, C. S. A., during the Civil War; founder of the Paducah (Ky.) Infirmary; died at his home in Blandville, Ky., March 7, aged 78.

Percy N. Richardson, M.D. Meharry Medical College, Nashville, Tenn., 1892; a member and once president of the Florida State Medical Association of Colored Physicians; died at his home in Jacksonville, Fla., February 18.

David Paul Swisher, M.D. Jefferson Medical College, 1892; a physician and druggist of Darby, Pa.; for several years borough secretary; died in the Jefferson Hospital, Philadelphia, March 3, from pneumonia, aged 46.

George Post, M.D. New York University, New York City, 1885; of Ovid, N. Y.; who had been under treatment in the Willard State Hospital, is said to have committed suicide by hanging at his home in Ovid, March 5, aged 52.

E. M. McComas (license, Nebraska, 1891), a practitioner and druggist of Brownville, Neb., for many years; for four years probate judge of Nemaha County, Neb.; died at his farm home near Brownville, March 7, aged 90.

Hugh W. Love, M.D. Eclectic Medical College of Pennsylvania, Philadelphia, 1880; formerly a member of the Medical Society of the State of Pennsylvania; died at his home in Harrison City, Pa., March 6, aged 61.

Emery Herschell Leyman, M.D. University of Michigan, Ann Arbor, 1871; for many years local surgeon to the Wabash Railroad at Huntington, Ind.; died at his old home in Patmos, Ohio, March 4, from influenza, aged 47.

William Prankard, M.D. Eclectic Medical College of the City of New York, 1871; a practitioner of Brooklyn for more than thirty years; died at his home in South Brooklyn, N. Y., March 9, from senile debility, aged 83.

Andrew Slaght, M.D. University of Michigan, Ann Arbor, 1868; for more than forty-five years a practitioner of Grand Blanc, Mich.; died at his home in that place, February 22, from cerebral hemorrhage, aged 82.

James Burton Sharp, M.D. Memphis Hospital Medical College, 1901; a member of the Missouri State Medical Association; died at his home in Senath, Mo., from an overdose of cannabis indica, aged 43.

Emil H. Scharnberg, M.D. University of Louisville, Ky., 1890; formerly local surgeon of the Missouri, Kansas and Texas System at New Ulm, Tex.; died at his home in Coupland, Tex.; March 7, aged 47.

John M. Gwinner, M.D. University of Pennsylvania, Philadelphia, 1881; for twenty-five years a practitioner of Centralia, Pa.; died at his home in Mechanicsville, near Pottsville, Pa., March 7, aged 57.

William G. Brownell, M.D. New York Homeopathic Medical College, New York City, 1879; died at his home in Rochester, N. Y., recently, aged 60.

Pierre Clement Tircuit, M.D. Tulane University, New Orleans, 1869; for forty years a practitioner of St. James' Parish, La.; died at the home of his daughter in Abbeville, La., February 14, aged 77.

Mary A. Shepherd, M.D. Hahnemann Medical College, Chicago, 1887; a practitioner and for four years postmistress of Wimmers, Pa.; died suddenly in Sterling, Pa., March 7, from pneumonia, aged 75.

Daniel W. McGee, M.D. Missouri Medical College, St. Louis, 1872; of Mountain Grove, Mo.; a member of the Missouri State Medical Association; died in Springfield, Mo., March 8, aged 58.

Merritt G. Witter, M.D. St. Louis College of Physicians and Surgeons, 1892; of Tonkawa, Okla.; died in the Wichita (Kan.) Hospital, February 24, from carcinoma of the stomach, aged 75.

William Henry Stephens, M.D. Meharry Medical College, Nashville, Tenn., 1898; a practitioner of Chattanooga, Tenn., for seventeen years; died in that city, March 4, from myocarditis, aged 37.

Archibald Montgomery, M.D. University of Toronto, Ont., 1892; a practitioner of the Peace River District, Alberta; died at the home of his parents in Toronto, March 9, from heart disease.

Lawrence Lonzo Swogger, M.D. Rush Medical College, 1902; a Fellow of the American Medical Association; died at his home in New Bedford, Pa., March 8, from pneumonia, aged 38.

Lee Dreisbach, M.D. Kentucky School of Medicine, Louisville, 1884; of Collinston, La.; died in New Orleans, February 26, two weeks after a surgical operation, aged 52.

William Ledmon Allen, M.D. University of Buffalo, 1875; formerly of Syracuse and Auburn, N. Y.; died at his home in North Tonawanda, N. Y., February 17, aged 67.

Helier Noel Coutlee, M.D. Queens University, Kingston, Ont., 1882; of Sharbot Lake, Ont.; died in the Kingston (Ont.) General Hospital, Dec. 8, 1914, aged 57.

David E. Archer, M.D. Homeopathic Medical College of Missouri, St. Louis, 1890; of Greeley, Colo.; died at his old home in Amsterdam, Mo., February 1, aged 50.

Elmer Bertram Holst, M.D. Toledo (Ohio) Medical College, 1896; of Rossford, Ohio; died in the East Side Hospital, Toledo, February 22, from nephritis, aged 39.

William S. Hendricks, M.D. College of Physicians and Surgeons, Keokuk, Ia., 1875; died at his home in Chicago, March 6, following a prostatectomy, aged 64.

Michael Lorenz (license, Illinois, years of practice, 1879), for forty-five years a practitioner of Chicago; died at his home in that city, March 5, aged 74.

Oscar Rosenoen Lanng, M.D. University of Copenhagen, Denmark, 1870; an oculist of New Orleans; died at his home in that city, February 20, aged 79.

David C. Fouts (license, Indiana, 1900), formerly of New Salisbury, Ind.; died suddenly at his home in Georgetown, Ind., Dec. 19, 1914, aged 70.

William Leonard Birney, M.D. Missouri Medical College, St. Louis, 1879; died at his home in Rantoul, Kan., February 27, from paralysis, aged 76.

Marion S. Hawkins, M.D. University of Nashville, Tenn., 1878; of Nashville; died at the home of his niece in that city, February 25, aged 59.

William J. Gardner, M.D. University of Pennsylvania, Philadelphia, 1893; died at his home in McKeesport, Pa., February 24, aged 44.

Calvin Hathaway, M.D. Cincinnati College of Medicine and Surgery, 1863; died at his home in Edgerton, Ohio, Dec. 31, 1914, aged 75.

William T. Nash, M.D. Medical College of Georgia, Augusta, 1886; died suddenly at his home in Philomath, Ga., February 16.

Charles H. Doss, M.D. Eclectic Medical Institute, Cincinnati, 1873; died at his home in Pittsfield, Ill., recently, aged 81.

Gideon Lanning Barber, M.D. Hering Medical College, Chicago, 1894; died at his home in Chicago, Dec. 27, 1914, aged 71.

J. M. Hoey (license, West Virginia, years of practice, 1881) died at his home in Clarksburg, W. Va., March 2, aged 69.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

NEURILLA

Report of the Council on Pharmacy and Chemistry

The following report was adopted by the Council. Its publication was authorized to show how a practically worthless mixture may be exploited by means of ill-considered testimonials.

W. A. PUCKNER, Secretary.

Neurilla, which appears to be the sole product of the Dad Chemical Company, New York, is advertised as

"The Ideal Nerve Calmant."
". . . a nerve tonic . . . indicated in cases where the nerve centers are poorly nourished and over-sensitive . . ."
". . . a stimulant to the nervous system."
"A Valuable Aid in the Treatment of Fevers, Colds, La Grippe, etc."

The following non-quantitative and indefinite formula is given on the label of a recently purchased bottle of Neurilla:

"Prepared from Scutellaria Lateriflora, Passiflora Incarnata and Aromatics."
"Proportion of Alcohol 20.3%.
"Made by Dad Chemical Co., New York, U. S. A.
"Dose, One Teaspoonful Four Times a Day."

According to the formula, then, this mixture contains, aside from alcohol and aromatics, two vegetable drugs, scutellaria and passiflora, on which the alleged virtues of the preparation must be presumed to depend.

Scutellaria lateriflora, or skullcap, is a bitter drug, one of the many "herbs" to which, on wholly unreliable "clinical evidence," therapeutic properties were at one time ascribed. Most pharmacologists do not mention the drug, and those who do, generally state that it has very feeble therapeutic properties. It was admitted to the Pharmacopeia, but in 1909 its deletion was recommended by a committee of the Section on Practice of Medicine of the American Medical Association (THE JOURNAL A. M. A., Sept. 4, 1909, p. 792). We understand that the next edition of the Pharmacopeia will omit mention of skullcap.

Passiflora incarnata, or passion-flower, is another "herb," which, although known for about seventy years, has never gained the confidence of the medical profession and has not even been admitted to the Pharmacopeia. According to a Council Report:

"None of the evidence is sufficient to show that passiflora has therapeutic value; hence it is deemed inadvisable to include the drug in the list of nonofficial remedies" (THE JOURNAL A. M. A., March 19, 1910, p. 983).

On these two obsolescent "herbs," then, rest the remarkable claims made for Neurilla. A certain degree of appetizing effect may be expected from the bitter taste and a very slight degree of physical stimulus from the alcohol. Except for these effects—and they are largely delusive and temporary—the preparation is therapeutically inert and worthless.

The evidence on which the manufacturers of Neurilla base their therapeutic claims appears to consist of testimonials from physicians. As a matter of fact, this is true of practically all of the large group of nostrums of which Neurilla is typical. An analysis of these Neurilla testimonials brings out clearly what such "evidence" is worth.

ILL-CONSIDERED TESTIMONIALS

The testimonials for Neurilla have been given with reference to indefinite conditions of nervousness that border on the psychic and include hysteria, neurasthenia, neuralgia and the like. Nervousness and indigestion are two diseases in which suggestion, especially when aided by bitters and alcohol, produces temporarily a feeling of improvement. As an illustration, take the following testimonial:

"But more striking was the following case: One evening between 5 and 6 o'clock I was sent for, family lives near me, and I was informed that the young lady had promised to be bridesmaid, a function she had never performed. Her mother said the daughter would certainly drop in her tracks as she walked up to the altar with the procession, and they had about concluded to send a note saying to the parents of the bride that she could not come, although that would be very disagreeable (and no less offensive, said I). They agreed with me. I ordered Neurilla for two hours. She went to church, and, I was informed the next morning, passed through the dreaded ordeal simply fatigued, and was now fast asleep on account of the nice effect of Neurilla."

It might provoke a smile to think that a manufacturer would publish so silly a testimonial were it not that the very fact of its publication indicates that there are medical men thoughtless enough to read and accept such stuff as reliable evidence as to the value of any product.

TESTIMONIALS GIVEN LONG AGO—THE REMEDY ABANDONED

A number of physicians who had given testimonials were asked in writing whether the testimonials were genuine and whether they still entertained the high opinion of Neurilla expressed at a former date. Several replied that, if they had ever given such testimonials, they had forgotten the circumstance. From the replies received we select the following:

The testimonial which bears Dr. A's name reads:

"I am using Neurilla with most satisfactory results."

Dr. A now says:

"As to its positive value as a therapeutic agent I have not used it enough to know . . . If the language you quote . . . appears as given in or as a 'testimonial' it must in some way be garbled and appears wholly without my knowledge or consent."

Dr. B is quoted as having written:

"I do not often lend my influence to furthering the fame of a proprietary remedy, but I have achieved such excellent results from the use of Neurilla as a calmative in hysteria and other nervous disorders, that I feel its manufacturers are entitled to an acknowledgment of gratitude from me."

Dr. B writes:

"I have not prescribed a dose of the nostrum in years. The use of my name in connection with Neurilla is unauthorized."

Dr. C once wrote:

"I have used Neurilla with good results."

Dr. C now writes:

"In re 'Neurilla' I think I used the preparation once or twice and it seemed to do good work, but if due to the preparation or other influences, I am not able to verify. I have not used it since nor will, as I am opposed to using these preparations except in certain cases where the B contains remedies whose value I have verified under the most rigid tests.

. . . . . .

"P. S. This testimonial must have been given many years ago."

Dr. D's testimonial is admitted to be based on a single case:

"I am using Neurilla in a bad case of neuralgic tic with very good results on an aged lady. She has taken several bottles, and is still taking it with very good results."

Dr. D sums up his later experience by saying:

"I have long since abandoned the use of Neurilla in practice."

The following bears Dr. E's name:

"I endorse Neurilla without hesitation. It meets all indications for which it is intended."

This is what Dr. E writes now:

"As to the enclosed testimonial in regard to Neurilla said to be written by me I have no recollection. I am not prescribing Neurilla."

Dr. F's experience is similar. The testimonial credited to him reads:

"I have prescribed Neurilla in nervous disorders with good results."

Dr. F now writes:

"I don't remember of ever having prescribed 'Neurilla' or of having given a testimonial for it or any other patent medicine if I knew it to be so."

SUMMARY

In the booklet from which the foregoing are taken, there are forty testimonials. Those which we quote are merely samples. To sum up the results of this analysis: Of the testimonials some are said to be unauthorized; a number were written with so little thought that the writers had since forgotten their very existence; the conclusions expressed in most are not in fact justified by the writers' mature judgment and experience. A number of writers admit that their experience is insufficient to determine whether the supposed good results were due to the medicine used or to other influences. Of course such evidence is unworthy of credit and happily, very little is now being furnished by doctors; even our courts refuse to admit it.

In short, the published formula shows that Neurilla is nothing more than a preparation of discredited drugs; it is exploited largely by means of carelessly formed and thoughtlessly expressed opinions of physicians. It is recommended that this report be published as an illustration of such methods and as a protest against them.

[EDITORIAL COMMENT.—Neurilla is advertised in the following publications:

Archives of Pediatrics,
Atlanta Journal Record of Medicine,
Charlotte Medical Journal,
Indianapolis Medical Journal,
International Journal of Surgery,
Journal of Nervous and Mental Diseases,
Medical Herald,
New York Medical Record,
Medical Review of Reviews,
Medical Sentinel,
Medical Standard,
Pacific Medical Journal,
Southern Practitioner,
Texas Medical Journal,
Woman's Medical Journal.
Eclectic Medical Journal,
Ellingwood's Therapeutist,
Journal of the American Institute of Homeopathy.]

DR. GUERTIN'S NERVE SYRUP

Another Member of the Epilepsy Cure Fraud Family

Dr. Guertin's Nerve Syrup is sold by a Cincinnati concern, the Kalmus Chemical Company, or, as it has been termed, the Otto Kalmus Chemical Company. Each carton of the nostrum bears a picture of an apparently well-fed but not otherwise prepossessing individual under which, in autograph style, is the name "A. L. Guertin, M.D."

Before discussing Guertin's Nerve Syrup it will be profitable to review an older chapter of Cincinnati quackery. For some years previous to 1908 one Otto Kalmus of Cincinnati conducted a medical mail-order fraud known as the Epileptic Institute. In 1908 the postoffice officials put the concern out of business by denying it the use of the mails. After the issuance of the fraud order an attempt was made to evade its effects by conducting the business under the name Hamilton Dispensary. The fraud order was extended to cover the new name and a quietus was finally put on the mail-order business.

Kalmus' scheme was to advertise that he could cure epilepsy by remedies unknown to medical science and termed by him the "Schönka treatment." The government proved that his remedies were in fact the bromids with adonis vernalis, and the federal inspectors were unable to learn of any "cures" that had been effected. They did come across some cases in which the victims had become so seriously affected by the bromids that the "treatment" had to be discontinued and the unfortunates confined in state institutions.

Kalmus further claimed that he had connected with his "institute" trained and skilled specialists including one of the foremost examining specialists in America. Investigation disclosed that there had been connected with the "institute," at different times since its inception, three physicians, E. H. Schoenling, H. J. Luecke and A. L. Guertin. Kalmus himself was not a physician and had no medical education. The government report declared that Schoenling had made no special study of epilepsy, that he had worked most of the time since his graduation for a "men's specialist" quack, and that he was not a member of any reputable medical society; it declared, also, that Luecke was not a specialist in epilepsy, that while he was paid a paltry salary for his service to the "institute" his regular business was that of an advertising "specialist" whose advertisements had been excluded from the Cincinnati papers because they related to the sale of abortifacients and the performing of criminal operations. Before his connection with the Kalmus concern, Luecke seems to have been employed by a "men's specialist" outfit, the Bradford Medical Institute and also to have bought out another quack concern.

As to A. L. Guertin, the report declared he received $35 a month for his services to the Epileptic Institute, his professional standing was questionable, he admitted that he was not a specialist and that he had little or no practice in Cincinnati and he had been shown previously to have sold a testimonial to a fraudulent concern and afterward repudiated it. From a report sent in from Zanesville, Ohio, recently, it appears that one Alfred L. Guertin is connected with a quack organization calling itself the United Doctors.

Reduced reproduction of Dr. Guertin's Nerve Syrup, a fraudulent "patent medicine" sold as a cure for epilepsy.

So much for Otto Kalmus' fraudulent Epileptic Institute and his assistants, Luecke, Guertin, *et al.* The details of this case have been well set forth elsewhere.[1] Dr. Guertin's Nerve Syrup, the subject of the present article, is sold under such claims as:

"It stops Fits and Convulsions promptly."

". . . is guaranteed harmless. . ."

". . . the first few doses have stopped the attacks in the most distressing cases of Epilepsy. . ."

"It is well named 'The Sunshine for Epileptics.'"

"This excellent Nervine is the result of repeated trials, careful and prolonged experiments and years of observation of its effect in the diseases for which it is recommended. It reflects the best thought of the day."

"There is nothing better in the world for this obscure disease."

In addition to letters and circulars sent to prospective purchasers, the Kalmus Chemical Co. also sends out the inevitable booklet without which no fraudulent "cure for fits" is complete. True to type this publication contains, besides the usual farrago of pseudo-scientific nonsense, horrific pic-

1. "Nostrums and Quackery," Second Edition, pp. 348-364; also in the pamphlet, "Medical Institutes," published by the American Medical Association, price 10 cents.

tures of unfortunate epileptics in various unpleasant contortions.

Examined in the Association's Laboratory, the chemists reported:

CHEMISTS' REPORT[2]

One original bottle of "Dr. Guertin's Nerve Syrup," manufactured by the Kalmus Chemical Co., Cincinnati, Ohio, was submitted to the Chemical Laboratory for examination. The bottle contained 240 c.c. (8 fluidounces) of a brown syrupy liquid having extractive matter present. The specific gravity of the liquid at 15.6 C. was 1.3333. Qualitative tests demonstrated the presence of a very small amount of an alkaloid, ammonium, calcium, potassium, sodium, strontium, bromid, chlorid and sugar, a trace of invert sugar was also present. Quantitative determinations yielded the following:

Ammonia (NH_3) (by weight).....	0.38 per cent.
Calcium (Ca++) (by weight).....	0.10 per cent.
Potassium (K+) (by weight).....	2.47 per cent.
Sodium (Na+) (by weight).....	1.00 per cent.
Strontium (Sr++) (by weight)	0.40 per cent.
Bromid (Br—) (by weight).....	11.43 per cent.
Chlorid (Cl—) (by weight).....	0.20 per cent.
Sugar (Sucrose) (by weight).....	34.44 per cent.

Essentially each 100 c.c. of the solution contains 2.9 grams ammonium bromid, 1.5 grains strontium bromid, 0.9 grams calcium bromid, 10.9 grams potassium bromid, 4.5 grams sodium bromid, with 45.9 grams sugar. Calculating from the bromid determinations each dose, 1 to 2 teaspoonfuls (1 to 2 fluid drams) contains the equivalent of 13.9 to 27.8 grains potassium bromid, and the daily dose (4 to 8 teaspoonfuls) corresponds to 55.6 to 111.2 grams potassium bromid.

Bromids, of course—although the public is not apprised of the fact. "Harmless" it is said to be, although it possesses all the potency for harm that resides in secret mixtures of the bromids. Dosage? Left, as usual, practically in the hands of the person who takes it:

"If the doses as given on the bottle do not bring the attacks under control, increase the quantity. . ."

Firm in the belief that the preparation is what the exploiters claim, "a mild and harmless nervine," ignorant of the presence of the bromids, the sufferer is dosed into physical and mental inactivity. Such must be the inevitable result of the indiscriminate use of "Dr. Guertin's Nerve Syrup" which is not a "safe and dependable remedy for all nervous diseases" as claimed, but is an unsafe and fraudulent nostrum.

Correspondence

Bureau of Clinical Information in New York

To the Editor:—Dr. Jasper's letter (THE JOURNAL, Jan. 9, 1915, p. 168) has just come to my notice. He regrets a lack of organization in New York's advantages for clinical study.

The New York men have the same regret, and have organized a society to place the city's clinical facilities within the reach of any who desire to take advantage of them.

This society is called the Society for the Advancement of Clinical Study in New York. A bulletin is published each day which announces the clinics and the kind of operations, or in case of medical clinics, the cases which will be shown. This daily bulletin will be sent to any resident or visiting physician for a nominal sum and is delivered in each morning's first mail. The average number of operations thus posted is about 150 a day. An information bureau is conducted by this society at the Academy of Medicine, 17 West Forty-Third Street, and during a part of each day a clerk gives such information as is desired, and during the entire day the bulletins are accessible to all who care to see them. The surgical and medical men of New York are delighted to welcome visitors to the hospitals where they work, and will show them every possible courtesy.

CHARLES N. DOWD, M.D., New York,
Chairman, Executive Committee.

2. This is a condensed report of the chemists' findings. The details of analysis will appear in the Reports of the Chemical Laboratory of the American Medical Association for 1915.

The Country Physician

To the Editor:—In almost every number of THE JOURNAL there may be found some reference to the "country physician," usually in a slighting way, written by some of our more enlightened (?) city brothers. I am a country physician, and am not ashamed to say it. I wonder if our city brothers think they are the only ones to get the advantage of newer and more up-to-date methods? I should like to take some of these men along on one of my trips through the country and show them what we have to contend with in our practice; maybe they would then have more respect for country practitioners. When we have a serious case of childbirth or a surgical case, etc., can we take the patient to a hospital immediately and have skilled men to help us? No; perhaps we are miles from a hospital and other physicians, and must do the best we can under circumstances where the city men might be lost and unable to proceed in the unfamiliar surroundings. As for the country man's cases, both medical and surgical, I think that if one would look through some city men's cases one would find more to make fun of than in the country man's case. I always have respect for the country man, not because I am one myself but because I know the conditions he has to contend with, and know if a good many of these city men who write about us were suddenly transplanted to the country they would be as much at sea as the proverbial "hayseed" would be in the big city.

L. H. FLANCHER, M.D., Lomira, Wis.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

BAKING POWDERS

To the Editor:—I wish you would give me some information concerning the purity and composition of the baking powders. I refer especially to the following: Calumet, Royal, Rumford and White Ribbon. The last one is being pushed by the local organization of the Women's Christian Temperance Union. The claim is that it is purer.

My wife has used Royal more extensively than the others, and says that she cannot get as good results with the others. There is such a difference in price that I wish to make inquiry.

One of our grocers says that the Royal Baking Powder is sold to the government for 8 cents a pound. Do you know about this?

I wish to ask also if alum, in any form, is injurious in the baking powders.

I have no financial interest in the baking powder business, but I make this inquiry purely from my interest in the subject, and because a large number of questions have been asked concerning this subject.

H. H. JOHNSON, M.D., Ypsilanti, Mich.

ANSWER.—In general, baking powders consist of a carbonate or bicarbonate from which carbon dioxid is liberated by the action of a second substance, the so-called "acid" ingredient, when the powder comes in contact with moisture. For the carbonate, sodium bicarbonate (baking soda) is used, and for the acid constituent one of three substances is used, namely, (1) potassium acid tartrate (cream of tartar), (2) calcium acid phosphate, and (3) alum (potassium aluminum sulphate—potash alum, ammonium aluminum sulphate—ammonia alum or sodium aluminum sulphate—soda alum). Potassium aluminum sulphate and ammonium aluminum sulphate are rarely used in baking powders to-day. Baking powders containing tartrate introduce potassium sodium tartrate into the bread; those containing phosphate introduce calcium phosphate and sodium phosphate, and those containing alum introduce aluminum hydrate, sodium sulphate and either potassium or ammonium sulphate, according to whether potassium or ammonium alum was used. Much has been written on these residual substances left in bread by baking powders, and especially, pro and con, regarding the harmfulness of alum; but up to the present, the question is still an open one. In some states alum is required to be especially declared on labels. Some brands of baking powder contain small amounts of egg albumin. The use of albumin in baking powders is of no value in the production of gas. Its principal use appears to be to make tests in demonstrations before dealers, consumers, etc. These tests, it is claimed, enable the purchaser to deter-

mine the gas producing power of the baking powder. Baking powders usually contain from 25 to 40 per cent. of starch.

Recent investigations having shown that the ingestion of tartaric acid might cause kidney irritation, although evidence has been offered that in the quantities taken such effects are unlikely, the findings are used by opposing baking powder firms as an argument against the use of the tartrate baking powders.

As to the composition of the powders to which you refer: We have no information in reference to the composition of the White Ribbon brand of baking powder.

According to an analysis by the North Dakota Food Department in 1913, Calumet Baking Powder is a combination of the alum and phosphate types, containing about 13.4 per cent. of available carbon dioxid and about 38.4 per cent. of starch. It is said also to contain egg albumin.

Royal Baking Powder is of the cream of tartar type. Analyses by the North Dakota Food Department showed about 12 per cent. of available carbon dioxid and 27 per cent. of starch.

Rumford Baking Powder is of the acid phosphate type. The analyses by the North Dakota Food Department showed about 11.3 per cent. of available carbon dioxid, but did not state the amount of starch present.

ARTICLES ON PERSONAL HYGIENE

To the Editor:—Please inform me of articles containing suitable material for a paper on personal hygiene to a Y. M. C. A. or college class. J. I. B.

Answer.—Following is a list of articles on the subject:

Shumacker, Leopold, and Middleton, W. S.: The Cardiac Effects of Immoderate College Athletics, The Journal, April 11, 1914, p. 1136.

The Hygiene of Athletic Sports—Rowing, editorial, The Journal, April 11, 1914, p. 1172.

Athletics and Health, editorial, The Journal, Feb. 8, 1913, p. 446.

College Athletics in After Life, Miscellany, The Journal, Jan. 25, 1913, p. 300.

Friedman, H. M.: Muscular Development, the Causes for the Lack of It, and the Value of Physical Exercise, The Journal, March 9, 1912, p. 685.

Zenner, P.: Education in Sexual Physiology and Hygiene, Cincinnati, Robert Clark & Co., $1.

Hall, W. S.: Reproduction and Sexual Hygiene (written especially for college students), Chicago, Wynnewood Publishing Company, $1.

Morrow, P. A.: Social Disease and Marriage, Philadelphia, Lea & Febiger, $3.

LITERATURE ON DEFERRING OF OLD AGE

To the Editor:—I am to prepare a paper on old age deferred. Please tell me where I can obtain the best works on this topic, or give the title or publisher. William E. Whitney, M.D., Eldora, Iowa.

Answer.—The following is a list of recent papers and books on the subject:

Niles, G. M.: The Dyspepsia of Old Age, *Am. Jour. Med. Sc.*, January, 1911; abstr., The Journal, Feb. 11, 1911, p. 436.

Nascher, F. L.: Geriatrics, *Med. Rec.*, New York, April 20, 1912.

Senility, Therapeutics, The Journal, Aug. 3, 1912, p. 370.

Crichton-Brown: Prevention of Senility, New York, Macmillan Company, $0.75.

Lorand: Old Age, Philadelphia, F. A. Davis Company, $2.50.

Metchnikoff: Prolongation of Life, New York, G. P. Putnam's Sons, $1.75.

Minot: The Problem of Age, Growth and Death, New York, G. P. Putnam's Sons, $2.

Weber: Means for the Prolongation of Life, London, J. Bale Sons & Danielsson.

Saundby: Old Age, Its Care and Treatment, New York, Longmans, Greene & Co.

DOSAGE OF TARTAR EMETIC

To the Editor:—I should like to know if the dose of tartar emetic as quoted in the U. S. Dispensatory is right. The emetic dose is given as ½ grain. I have often given 5 grains without emetic results, but 10-grain doses seem to work very well as a severe nauseating emetic in periodical inebriates. I have used 10-grain doses in such cases for a number of years, with good results. Should one of these habitual debauchees succumb to some intercurrent disease, during a spree some time, could I be held responsible by giving a larger dose than recommended by the U. S. Dispensatory? I have used 10-grain doses for over twenty years in such cases.

Please omit name. X. Y. Z., San Francisco, Cal.

Answer.—The proper dose is from one-half to 1 grain. One and one-half grains have proved fatal, but this case should be regarded as exceptional. Ten grains given at one time would be a dangerous dose, and the same amount in broken doses would be still more so. It is sometimes recommended to give one-half grain, repeated every fifteen minutes for several doses until vomiting is secured. This would probably be a safe and justifiable dosage in certain instances. It is probable that a physician would be held negligent for giving a dose of over 2 grains if toxic effects followed.

INQUIRIES ON THE HARRISON LAW

Prescribing Opium for an Addict

To the Editor:—Does the Harrison antinarcotic law permit a physician to prescribe opium or any of its derivatives to a person addicted to its use? R. F. D.

Answer.—There is no provision in the Harrison law that limits physicians in prescribing for their patients. As all records are subject to inspection, it would naturally be advisable for the physician to be prepared to justify any of his actions, if necessity arose. The administration of opium or its derivatives in decreasing doses to a drug addict as a part of a course of treatment for the purpose of curing the patient of the habit is undoubtedly permissible. Whether any ruling is possible, under the law, to prevent a physician from furnishing an opium habitué with sufficient quantities of drugs to enable him to continue his drug habit, it is impossible to say at present. Certainly such a procedure on the part of a physician would not be regarded as in accordance with the highest principles of the medical profession, however it might be regarded from a legal standpoint. A physician is justified in using whatever drugs are necessary in an effort to cure a patient of any drug habit; he is not justified in acting as a procurer through whom the drug victim may obtain continued supplies of injurious drugs.

Double Registration Required

To the Editor:—Under the Harrison law, if a doctor sells patents, proprietary and domestic remedies, sundries, stationery, rubber goods, and has his office in connection with his store, does one license cover him? P. G. K.

Answer.—According to the regulations, a physician carrying on a drug business must register both as a physician and as a druggist. Two licenses would be necessary in the case described by our correspondent.

TREATMENT OF EPILEPSY WITH RATTLESNAKE VENOM

To the Editor:—1. Please tell me where I can procure rattlesnake venom for the treatment of epilepsy.

2. What is the consensus of opinion of the medical profession in regard to this treatment? Will B. Shore, M.D., Roberts, Mont.

Answer.—1. As our correspondent's address appears with this, he will undoubtedly receive information as to where he can obtain the venom.

2. This treatment has been discussed several times, and condemned, in The Journal. Articles have been published showing that it does not diminish the number of attacks, and in certain cases it has proved dangerous. The following references may be consulted:

Anderson, J. F.: Danger in the Subcutaneous Injection of Solutions of Crotalin, The Journal, March 21, 1914, p. 893.

Jenkins, C. L., and Pendleton, A. S.: Crotalin in Epilepsy, The Journal, Nov. 14, 1914, p. 1749.

Yawger, N. S.: Experience with Crotalin at the Oakburne Epileptic Colony, The Journal, May 16, 1914, p. 1533.

Crotalin in Epilepsy, Correspondence, The Journal, Dec. 12, 1914, p. 2151.

Further Light on the Use of Rattlesnake Poison in Therapy, Editorial, The Journal, March 21, 1914, p. 935.

Rattlesnake Venom in Epilepsy, Queries and Minor Notes, The Journal, March 15, 1913, p. 850.

Rattlesnake Venom Treatment of Epilepsy, Editorial, The Journal, March 29, 1913, p. 1001.

IDIOSYNCRASY TO MUSTARD AND HORSERADISH

To the Editor:—I am sending you the report of a peculiar case, and perhaps you can tell me the cause. A woman, aged 40, married, mother of five children, troubled occasionally with facial neuralgia, has a distinct idiosyncrasy against mustard and horseradish. She cannot even handle it without getting severe blisters wherever it touches the skin; on eating it, blisters form on lips and tongue and she has all the symptoms of acute gastritis. She has had this peculiarity since childhood. No other plants, such as poison ivy, seem to affect her; but merely the handling of a mustard glass will give her severe blisters.

L. H. Flanchier, M.D., Lomira, Wis.

Answer.—Such cases as the foregoing have usually been classified as examples of idiosyncrasy, and have been explained as forms of anaphylaxis.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARIZONA: Phoenix, April 6-7. Sec., Dr. John Wix Thomas, Phoenix.
CALIFORNIA: San Francisco, April 13-16. Sec., Dr. Charles B. Pinkham, State Capitol, Sacramento.
COLORADO: Denver, April 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.
DISTRICT OF COLUMBIA: Washington, April 13-15. Sec., Dr. George C. Ober, 125 B St., S. E.
IDAHO: Lewiston, April 6. Sec., Dr. John F. Schmershall, Jerome.
LOUISIANA: Homeopathic, New Orleans, May 3. Pres. Dr. C. R. Mayer, 919 St. Charles St., New Orleans.
MINNESOTA: Minneapolis, April 6-8. Sec., Dr. Thomas S. McDavitt, Lowry Bldg., St. Paul.
MONTANA: Helena, April 5. Sec., Dr. William C. Riddell, Helena.
NEVADA: Carson City, May 3. Sec., Dr. S. L. Lee, Carson City.
RHODE ISLAND: Providence, April 1-2. Sec., Dr. Gardner T. Swarts, 315 State House, Providence.
UTAH: Salt Lake City, April 5-6. Sec., Dr. G. F. Harding, 407 Templeton Bldg., Salt Lake City.
WEST VIRGINIA: Charleston, April 13. Sec., Dr. S. L. Jepson, 81 12th St., Wheeling.

New York September Report

Mr. Harlan H. Horner, chief of the Examination Division of the New York State Board of Medical Examiners, reports the written examination held at Albany, Buffalo, New York and Syracuse, Sept. 22-25, 1914. The total number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 187, of whom 120 passed and 67 failed. Nine candidates were licensed through reciprocity, and 9 candidates were granted reregistration licenses. The following colleges were represented:

College	Year Grad.	Total No. Licensed
PASSED		
University of California	(1907)	1
Yale Medical School	(1911,3) (1912,1) (1914,2)	6
Georgetown University	(1913)	1
George Washington University	(1914)	1
Rush Medical College	(1910)	1
Baltimore Medical College	(1908) (1913)	2
Johns Hopkins University	(1907) (1912,2) (1913) (1914)	5
University of Maryland	(1914)	1
Boston University	(1912)	1
Harvard University	(1902) (1911) (1914)	3
Tufts College Medical School	(1910)	1
Dartmouth Medical School	(1913)	1
Albany Medical College	(1912,1) (1913,3) (1914,7)	11
Columbia Univ. Coll. of Phys. and Surg.	(1912) (1913,3) (1914,9)	13
Cornell University	(1911) (1914,2)	3
Fordham University	(1913,2) (1914,3)	5
Long Island College Hospital	(1913,9) (1914,11)	20
New York Homeo. Coll. and Flower Hosp.	(1913) (1914)	2
Syracuse University	(1912,3) (1914,2)	5
University and Bellevue Hospital Med. Coll.	(1913,5) (1914,3)	8
University of Buffalo	(1913,9) (1914,2)	11
Western Reserve University	(1914)	1
Hahnemann Medical College of Philadelphia	(1913)	1
Jefferson Medical College	(1908) (1914)	2
Medico-Chirurgical College of Philadelphia	(1913)	1
University of Pennsylvania	(1905) (1909) (1913)	3
Woman's Medical College of Pennsylvania	(1912)	1
University of Texas	(1914)	1
University of Vermont	(1912) (1913)	2
University College of Medicine, Richmond	(1904) (1912)	2
Queen's University	(1901) (1912) (1913)	3
McGill University	(1913)	1
FAILED		
Georgetown University	(1913)	1
George Washington University	(1905)	1
Howard University	(1911)	1
Rush Medical College	(1913)	1
Tulane University of Louisiana	(1908)	1
Baltimore Medical College	(1913)	1
College of Phys. and Surgs., Baltimore	(1912)	1
Johns Hopkins University	(1910) (1911)	2
Boston University	(1905) (1912)	2
College of Phys. and Surgs., Boston	(1903)	1
Harvard University	(1908) (1911)	2
Tufts College Medical School	(1905)	1
Albany Medical College	(1910,1) (1913,2) (1914,4)	7
Columbia Univ. College of Phys. and Surgs.	(1911) (1912)	2
Fordham University	(1912) (1913)	2
Long Island College Hospital	(1912) (1913) (1914,4)	6
N. Y. Homeo. M. C. and Flower Hosp.	(1910) (1913,3) (1914,2)	6
New York Medical Coll. and Hosp. for Women	(1913)	1
Syracuse University	(1913,2) (1914)	3
University and Bellevue Hosp. Med. Coll.	(1913) (1914)	2
Eclectic Medical College, Cincinnati	(1914)	1
Jefferson Medical College	(1912) (1914)	2
Medico-Chirurgical College of Phila.	(1912) (1914)	2
University of Pennsylvania	(1913)	1
University of Virginia	(1913) (1914)	2
Marquette University	(1913)	2
Queen's University	(1911)	1
Laval University	(1900)	1
University of Prague, Austria	(1906)	1
University of Jena, Germany	(1910)	1
Royal Hungarian University, Budapest	(1902) (1911)	2
Royal University of Catania	(1912)	1
Royal University of Naples	(1908) (1912) (1913)	3
Royal University of Rome	(1910)	1
University of Geneva	(1913)	1
Syrian Protestant College, Beirut	(1912)	1

College	Year Grad.	Reciprocity with
LICENSED THROUGH RECIPROCITY		
Indiana Medical College	(1907)	Indiana
University and Bellevue Hosp. Med. Coll.	(1913)	New Jersey
Ohio Medical University	(1906)	Ohio
Starling-Ohio Medical College	(1908)	Ohio
Medico-Chirurgical College of Philadelphia	(1901)	New Jersey
Medical College of Virginia	(1909,2) (1911)	Virginia
University College of Medicine, Richmond	(1899)	Virginia

Connecticut Eclectic November Report

Dr. T. S. Hodge, secretary of the Connecticut Eclectic Medical Examining Board, reports that two candidates were licensed through reciprocity at the written examination held at New Haven, Nov. 10, 1914. The following colleges were represented:

College	Year Grad.	Reciprocity with
LICENSED THROUGH RECIPROCITY		
Eclectic Medical University, Kansas City	(1914)	Kansas
Eclectic Medical College, Cincinnati	(1913)	Arkansas

Maine November Report

Dr. Frank W. Searle, secretary of the Maine Board of Registration of Medicine, reports the written examination held at Portland, Nov. 10-11, 1914. The total number of subjects examined in was 10; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 15, of whom 11 passed and 4 failed. Six candidates were licensed through reciprocity. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Georgetown University	(1914)	87
Medical School of Maine	(1892) 76; (1914)	81
Maryland Medical College	(1912)	82
Boston University	(1914)	82
College of Phys. and Surgs., Boston	(1907) 75; (1913)	79
Harvard University	(1914)	85
Tufts College Medical School	(1913)	82
Long Island College Hospital	(1912)	82
University of Edinburgh	(1902)	95
FAILED		
Medical School of Maine	(1914)	72
University and Bellevue Hospital Medical College	(1906)	77*
University of West Tennessee	(1913)	73
National University of Athens	(1906)	57

College	Year Grad.	Reciprocity with
LICENSED THROUGH RECIPROCITY		
University of Louisville	(1910)	Kentucky
University Medical College, Kansas City	(1899)	Missouri
Medical College of Ohio	(1890)	Kentucky
University of Vermont	(1913,3)	Vermont

* Conditioned in one subject.

Arizona January Report

Dr. John Wix Thomas, secretary of the State Board of Medical Examiners of Arizona, reports the written examination held at Phoenix, Jan. 5-6, 1915. The total number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 7, of whom 4 passed, including 1 osteopath, and 3 failed, including 1 osteopath. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
New York Homeopathic Med. Coll. and Flower Hosp.	(1913)	79.9
Vanderbilt University	(1910)	75
McGill University	(1910)	79.1
FAILED		
College of Phys. and Surgs., San Francisco	(1913)	71.1
Columbian Medical College, Kansas City	(1899)	62.7

Book Notices

DIFFERENTIAL DIAGNOSIS PRESENTED THROUGH AN ANALYSIS OF 317 CASES. By Richard C. Cabot, Assistant Professor of Clinical Medicine, Harvard University Medical School. Volume 2. Cloth. Price, $5.50. Pp. 709, with 254 illustrations. Philadelphia: W. B. Saunders Company, 1914.

In this volume, Dr. Cabot offers the second instalment of his collection of medical puzzles, together with his solutions, and comments on methods of diagnosis. The cases are selected to illustrate certain symptoms or prominent physical findings, including abdominal and other tumors, vertigo, diarrhea, dyspepsia, hematemesis, melena, hemoptysis, edema of the face and of the legs, polyuria, fainting, hoarseness, pallor, delirium, ascites and abdominal enlargement. As in the previous volume, each chapter is preceded by diagrams showing how often one may expect to find a given symptom resulting from any one of the several diseases which may cause it. We agree with Dr. Cabot that "a lack of skill in history taking seems to mislead us more often than faulty physical examination," so far as chronic cases are concerned; we believe, however, that in more acute cases, and in those chronic illnesses treated throughout their entire course by the physician, his failure to arrive at a correct diagnosis lies chiefly in neglect of careful physical examination. The great lesson to be gathered from a reading of Dr. Cabot's cases is that an orderly arrangement of facts of history and routine physical and laboratory examination will as a rule point to the probable diagnosis. There are, of course, many instances in which the obtainable evidence is insufficient, and hence the diagnosis remains in doubt. While a limited number of such speculative diagnoses are of didactic value in teaching the limitations of medical skill, we doubt the desirability of including certain of the more indefinite cases in which the conclusions as to diagnosis are necessarily open to question, and where one guess is as good as another. In the main, a perusal of several cases illustrating a given symptom leaves the reader with a clear picture of many of the practical problems of diagnosis which he himself has encountered, and he has a lively sympathy with Dr. Cabot when the carefully thought out diagnosis is discounted by subsequent events. Honest confession is good for the medical soul. A careful reading of this collection of case histories is bound to stimulate the reader to more orderly and complete utilization of the sources of information in the study of his patients.

A PRACTICAL TEXT-BOOK OF INFECTION, IMMUNITY AND SPECIFIC THERAPY WITH SPECIAL REFERENCE TO IMMUNOLOGIC TECHNIC. By John A. Kolmer, M.D., Dr.P.H., Instructor of Experimental Pathology, University of Pennsylvania, with an Introduction by Allen J. Smith, M.D., Sc.D., LL.D., Professor of Pathology, University of Pennsylvania. Cloth. Price $6 net. Pp. 899, with 143 illustrations. Philadelphia: W. B. Saunders Company, 1915.

So rapid have been the advances of the last two decades in this particular department of medicine that there has been obvious need for gathering the enormous literature into a single volume. The work serves a threefold purpose: It aims to give practitioners and students an account of our present knowledge of infection and immunity; to serve as a guide to the various immunologic methods for laboratory workers, and to outline a course for students. The author says that an attempt has been made not to cover all the literature but to state concisely the well-established facts, and, in the case of more recent subjects, to give the principal references to the literature. The laboratory course given in the book is based on the courses given by the author in the University of Pennsylvania and in the Philadelphia Polyclinic.

The book is well illustrated with numerous striking halftones and colored plates. It is worth while to call attention particularly to figure 23, which illustrates the method of bleeding a guinea pig. Conspicuous in the foreground of this illustration is a large bottle labeled "ether," evidently with the intent of warning off criticism from antivivisectionists. This seems to be rather stretching a point, as most of the immunologic experiments indicated are, without doubt, less productive of pain than the giving of ether as an anesthetic.

The book considers, first, general immunologic technic; second, the principles of infection; third, the principles of immunity and special immunologic technic; fourth, applied immunity in the prophylaxis, diagnosis and treatment of disease, together with specific therapy; and the fifth portion consists of sixty exercises in experimental infection and immunity.

Part I is complete. The student can follow the instructions given, which are explicit and detailed.

Under the heading of infection, Part II, there are two chapters considering all the aspects of virulence and resistance, the various types of toxins, and the course of infection. Probably the most important portion of the book is that devoted to the principles of immunity (Part III); this includes not only a discussion of immunity phagocytosis, opsonins, etc., from a theoretical point of view, but also a large amount of practical material on the preparation of vaccines; their method of administration and the indications for their use; a discussion of antitoxins; a reliable review of the Abderhalden test, and the various methods connected with its development. Separate chapters are devoted to each of the various types of antibodies. The Wassermann test with various modifications and controls is fully discussed and adequately illustrated.

Part IV is wholly practical in its nature and gives to the reader a complete survey of modern methods in the treatment of disease with these new aids. Serum therapy, vaccine therapy and chemotherapy are all adequately treated, and the status of each is fully defined. The book is closed with a well-prepared index.

The one difficulty with the book from a practical point of view would seem to be its cost, which is probably excessive for the average student, especially as these subjects advance so rapidly that the student is continually compelled to supplement his book knowledge by reference to current periodical literature. The practitioner who has not kept abreast of this field will find in it a means of bringing himself wholly up to the times, thus better fitting himself to cope efficiently with the problems in this field.

A REFERENCE HANDBOOK OF THE MEDICAL SCIENCES. Embracing the Entire Range of Scientific and Practical Medicine and Allied Sciences. By various writers. First and second editions edited by Albert H. Buck, M.D. Third edition edited by Thomas Lathrop Stedman, A.M., M.D. Vol. IV, complete in 8 volumes. Cloth. Price, $7 net. Pp. 919, with 973 illustrations. New York: William Wood & Co., 1914.

The present volume covers a large number of interesting and important topics. Emotion is briefly considered from its physiologic aspect. In the article on "Energy," another philosophic discussion is presented which leads to the question, What lies beyond our final analysis of the phenomena of matter and force? A broader conception than usual is given of medical ethics. The basis of the teaching is found in the principles of ethics of the American Medical Association, and the elaboration of these principles includes the physician's duty to maintain a due amount of optimism and not to depress his patient by unfavorable prognoses. Under medical ethnology are discussed the relations of various races to the climate of the United States which has a vital interest in view of the extensive mingling of races in this country. The eye is treated in articles aggregating about eighty pages. The two articles treating of the development and the diseases of the fetus are of great interest. "Food for the Sick" covers twenty-seven pages and constitutes a practical treatise on dietetics. The method of fulguration according to de Keating Hart is clearly explained. Fungi are described in a long article illustrated by two fine colored plates. These give pictures in their natural colors of a number of edible mushrooms and also of the poisonous varieties. Other subjects are treated with corresponding thoroughness, and this volume maintains the standard of excellence reached in the preceding portion of the work.

Miscellany

The Profit and Loss Account of Modern Medicine

Under this title, Dr. Stewart McGuire, of Richmond, Va. (*Southern Med. Jour.*, December, 1914), gave the president's address at the eighth annual meeting of the Southern Medical Association, in Richmond. Dr. McGuire first considered modern medical education. "The most distinct profit and loss in modern medicine," he says, "have come about through changes in medical education which have been accomplished largely through the efforts of the American Medical Association, the Association of American Medical Colleges, and the Carnegie Foundation for the Advancement of Teaching."

As a result of this movement in the last ten years the total number of medical schools in the United States has been reduced from 186 to 101, and the total number of medical students from 28,142 to 16,502.

In its last report the Council on Medical Education says, "The most serious problems of medical education are no longer to be found in the South, but rather in some of the large cities of the East and North."

Dr. McGuire believes that there has not yet been time for the benefit of the change to be very apparent in actual practice, but the lessened number and improved quality of the graduates turned out each year will unquestionably in the end result in a great improvement in the ethics and efficiency of the profession.

The loss account bears as items the fact that many worthy although struggling colleges have been put out of existence and their property practically confiscated, and promising young men have been denied an opportunity to study medicine because of some defect in their preliminary high-school or college education. Furthermore, the modern medical school is not self-supporting and is a heavy financial tax on public funds or private philanthropy. Medical education has ceased to be a business and become a philanthropic work which must be supported by state appropriations and individual benefactions.

Finally, the cost of the modern method of teaching is so great—and it should be remembered that the graduate is a non-producer for a long period of years—that physicians will not settle in the country, but determine to locate in the city; this results in congestion. The remedy for the evil is to make country practice less arduous and more profitable, according to Dr. McGuire.

The modern doctor is compared to the physician of olden times. A physician of the old school was no specialist either in his early or late training, whereas the modern physician is trained almost from the earliest school work for his ultimate vocation. On the whole, we seem to have lost a character dear to literature, and gained a type, perhaps less ethical and more mercenary, but which is certainly a scientific instrument of greater professional efficiency.

In discussing the modern specialists, Dr. McGuire believes that unquestionably the patient is better cared for than formerly. Team work is essential to carry out the modern system of examinations.

Dr. McGuire believes that the laboratory, however, has been placed on too high a pedestal and that it is tyrannizing the clinician. It should be remembered that the best results are obtained by combining laboratory data and clinical findings, each being used to correct the possible error of the other.

Hospitals, too, have advanced. A hospital is now accepted as the safest, most comfortable and most economical place for the seriously sick, and it is also recognized as a local center for the dissemination of knowledge among the public, the training and education of nurses, and the uplift of the profession by the demands made for good records, thorough examinations, accurate diagnoses and rational treatment. The hospital of the future, Dr. McGuire says, should not only care for its patients, but also be a center for medical research, a stimulus for the understanding visitor, and a training-school for nurses, students and doctors.

The modern trained nurse has also been of the greatest importance in advancing the medical profession to its present high status. Medical societies give to the physician educational and professional advantages as well as important social and personal benefit. There is need for a movement to standardize medical associations, and until this is done through the proper channel, the profession should try to minimize the evil by withdrawing its membership from superfluous organizations.

The modern clinic affords means for observation of the work of others, and it has now become the custom for the busy surgeon and physician to devote two or three weeks of the time previously assigned for a vacation to the duty of seeing, at first hand, what his fellows are doing.

"Surgeons, as a rule, attend clinics more frequently than do physicians. This is a pity, for even in a strictly surgical clinic the points of greatest interest are not the methods of operating, but the explanation of symptoms by the pathological conditions found. It is a curious fact that many physicians who would travel miles to see a post-mortem examination will not go around the corner to witness an operation which demonstrates the same changes produced by disease in the living before they are obscured by terminal results. To correct the loss entailed by the failure of the average physician to avail himself fully of the advantages offered by the modern clinic, the internist must learn that to keep abreast of the times it is necessary not only to study but to travel as well."

Finally, Dr. McGuire considers the efficiency of publicity and warns against the teaching of false science, just as in the past, false history and false geography have been taught. He believes, too, that a greater familiarity with scientific facts may result in a loss in feminine character of women. For the present, publicity in medical matters has undoubtedly done good; but unless great care is taken, it is to be feared that a change from the credit to the debit side of the ledger in this regard is to be expected.

Consumption of Milk in the Philippines

According to *Daily Consular and Trade Reports*, the consumption of milk is rapidly increasing in the Philippines, although this is not apparent from the importation values of 1913 as compared with those of 1912. The increase of 1912 over 1911, however, is large, and the increased production and use of fresh milk in 1913 accounts for the difference in the amount imported. Two new dairies near Manila, with comparatively large output, have begun operations within the past two years. The small supply of milk has been heretofore chiefly from the small native cattle and the carabao, neither of which furnish large supplies. The native cows are not well adapted for milk production, and the decrease in their number for some years on account of rinderpest and other cattle diseases has decreased rather than increased the supply, which has been largely provided for by the importation of condensed and evaporated products from abroad. It is said there is now an increased tendency among Filipinos to use milk, and the growing wealth per capita makes this possible. The efforts during the past decade to teach mothers the proper care of their children has also resulted in greater use of milk as a standard food. Two societies have been organized in Manila for the training of mothers in the care of children, and each has a large membership. Five or six training schools for nurses have been established, and these send out large classes yearly. They give instruction in the training of children, urging the freer use of milk. There are practically no fresh milk dairies outside of Manila, and the supply when there is one is from the native cattle, goats or the carabao. The increased consumption is therefore chiefly dependent on imported milk. Prices for dairy products in and near Manila are about as follows: cow's milk, from 15 to 25 cents per liter (quart); cream, 25 cents per half pint; carabao milk, undiluted, from 12 to 17 cents, diluted, from 10 to 12 cents per liter.

Medicolegal

Power Conferred on State Board of Health—Validity of Ordinance to Secure Pure Milk

(Hawkins vs. Hoye et al. (Miss.), 66 So. R. 741)

The Supreme Court of Mississippi says that the legislature, by virtue of the police power of the state, may enact all needful laws for the purpose of preserving the health, preventing the spread of disease and protecting the lives of the citizens. Under this power the legislature may create boards of health and bestow on them necessary powers to promote the general health of the people by providing for them healthful conditions. The legislature conferred on the State Board of Health the power to make reasonable rules and regulations for the prevention of diseases and the protection of the health of the people. It is plain that the statutes bestowed on the State Board of Health the authority to adopt an ordinance requiring all cows used by dairymen selling milk to be semi-annually examined for tuberculosis and other contagious and infectious diseases, by a competent veterinarian, and that no one engaged in the business of buying and selling milk or its products shall sell or offer for sale any milk or any of the products thereof from any cow not examined and certified, or from any cow the use of which has been condemned and prohibited, or from any cow known to be infected, or the milk of which is impure and injurious to the public health. This does not violate the provision of the state constitution vesting in the legislature only the power to legislate. Statutes establishing boards of health for the purpose of advancing the public health by investing such boards with the power to adopt ordinances, rules and regulations necessary to secure objects are not unconstitutional as being a delegation of legislative power. The requirement that the cows used in the dairy business, where milk therefrom is sold generally to the people, shall be inspected as to their health twice during the period of a year is not an unreasonable regulation. The regulation is within the police power of the state. It is in aid of good health and consequently tends to the welfare and safety of the people. Tuberculosis is a disease dangerous and destructive to human life. It is recognized that tuberculosis may be communicated to human beings by the use of milk from cows affected with the disease. Therefore it was proper for the board of health, the body empowered and enjoined by the statute, to supervise the health interest of the people and to prevent the spread of epidemic diseases, to make this regulation. There is no purpose in it to deprive a person of property or restrict or interfere with his liberty of action. The court deems it in harmony with the organic law of the state and nation, the constitutions. Nor does the court see any force in the contention that this regulation should be made by and be under the control of the live stock sanitary board of the state. That board is not given any jurisdiction over matters such as is presented in this ordinance. The regulation in this case is to prevent the spread of a disease among human beings. It is not directed to sanitary measures in behalf of live stock.

Proof Required of Account for Services

(Tedrow vs. Johnson et al. (Ia.), 149 N. W. R. 645)

The Supreme Court of Iowa reverses a judgment obtained by the plaintiff for services rendered by him as a physician and surgeon and supplies furnished. The court says that it is constrained to hold that there was error in instructing the jury that the evidence as to value was undisputed, and that the jury should find for the plaintiff for the full amount of his claim, unless they found the account barred by the statute of limitations. It appeared that a small part of the plaintiff's account was for medicines furnished in 1904 and 1905. In 1906 a 3-year-old child of the defendants' was injured by a mowing machine. Both limbs were nearly severed. The larger part of the account was for services in treating this child for such injuries. The first charge was $40 for surgical work, and other charges were for calls and dressing the limbs almost daily for about seven weeks, and other charges were for professional services in the office. A charge of from $3 to $5 was made for each time a call was made and the limbs dressed. A few charges were for services for other members of the family. The evidence of the plaintiff as to the value of his services was short. But the question of value was an issue in the case which the plaintiff was required to prove. Another physician, who said that he had practiced medicine and surgery in Webster City for twenty-five years, and had practiced throughout the county, testified that a charge of from $3 to $5 for a trip from the town of Williams, 6 miles away, for the purpose of viewing and dressing the wound, was reasonable. When asked if he knew what charges prevailed for medical and surgical services on the part of physicians located in Williams for work in a radius of miles, he answered that he was not certain just about the fee, but he knew nearly what it was. The court considers that the foundation was sufficient to permit the witness to testify to charges in the neighborhood of Williams. The weight of his testimony was for the jury. From the interrogatory propounded to this witness, and the claim of the defendants that the charges were to be limited to $100, the court infers that there may have been some contention as to the amount or value of the services. If the question had been left to the jury, and they had found for the plaintiff in the amount claimed, the court would not, of course, say that the verdict was not supported by the evidence. In Fowle vs. Parsons, 141 N. W. R. 1049, it was held that, in an action by a physician to recover for services in performing a surgical operation, notwithstanding that the plaintiff's evidence as to the value of the services was not disputed, it was still a question for the jury, and was error to direct a verdict for the plaintiff for the full amount of his claim. It may work a hardship in some instances, but the rule is correct. If it were not so, a witness could testify that his services were worth $25, $50, or $500 for each visit, and the other party would be bound thereby. The burden of proof was on the defendants to show that the plaintiff's claim was barred by the statute of limitations.

Middle Course Taken on Liability of Charitable Institutions for Negligence

(Hoke et al. vs. Glenn et al. (N. C.), 83 S. E. R. 807)

The Supreme Court of North Carolina says that it prefers to adopt the middle course, which exempts charitable institutions from liability for the negligence of employees and requires the exercise of ordinary care in selecting them, as the more consonant with authority and with the purposes for which such institutions are established. The beneficiaries of charitable institutions are the poor, who have very little opportunity for selection, and it is the purpose of the founders to give them skilful and humane treatment. If they are permitted to employ those who are incompetent and unskilled, funds bestowed for beneficence are diverted from their true purpose, and, under the form of charity, they become a menace to those for whose benefit they are established. It is therefore better for those committed to their care and for the institutions, and necessary to effectuate the purpose of their creation, to require the exercise of ordinary care in selecting employees, and in supervising them. In the application of this principle, the distinction between the negligent act of the employee and the negligence of the corporate body in selecting employees must be kept steadily in view, as it is only the latter which creates liability.

Hospitals for Which Counties are Not Required to Appoint Boards of Managers

(Glasscock et al. vs. Wells et al. (Tex.), 171 S. W. 782)

The Court of Civil Appeals of Texas affirms a judgment for the defendants in this mandamus suit brought to compel the commissioners' court of Lamar County to appoint a board of managers for a hospital alleged to have been established by the county within its limits. The court says it thinks it

obvious that, in providing for the appointment of a board of managers for a county hospital, the legislature had in mind a hospital established and maintained by the county, not to meet a temporary emergency like that arising from an epidemic of smallpox, but permanently and continuously, for the treatment of illness, disease, and injuries generally. It is manifest from the provisions of the statute that the legislature did not mean to require the appointment of such a board to take charge of a building constructed by the county for use as a hospital, but which it never equipped or used for that purpose, and which, because it was unfit for the purpose, it had abandoned all intention of ever equipping and using. It is equally manifest from those provisions that the legislature did not mean to require the appointment of such a board to take charge of the pesthouses used only occasionally and for no other purpose than to detain, care for, and treat persons suffering with smallpox. The legislature had in mind an institution of a permanent character, to be continuously maintained, equipped for the care and treatment of sick and injured people generally. It is also as plain that a hospital given to a city in the county, and operated by the city and county on their joint account, was not a county hospital within the meaning of the provision in the statute requiring the commissioners' court to appoint a board of managers.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, SAN FRANCISCO, JUNE 21-25.

Alabama State Medical Association, Birmingham, Apr. 20-23.
Am. Assn. Gen.-Urin. Surgs., White Sulphur Springs, W. Va., May 18-20.
American Association of Immunologists, Washington, May 10.
Amer. Assn. of Pathologists and Bacteriologists, St. Louis, Apr. 2-3.
American Dermatological Association, New York, May 13-15.
American Gastro-Enterological Association, Baltimore, May 10-11.
Amer. Gynecological Society, White Sulphur Springs, W. Va., May 18-20.
American Medico-Psychological Assn., Fortress Monroe, Va., May 11-14.
American Neurological Association, New York City, May 6-8.
American Orthopedic Association, Detroit, May 6-8.
American Psychopathological Association, New York, May 5.
American Urological Association, Baltimore, April 13-14.
Arkansas Medical Society, Little Rock, May 3-6.
Association of American Physicians, Washington, May 11-12.
Conf. of State and Prov. Boards of North America, Washington, May 14.
Connecticut State Medical Society, Hartford, May 19-20.
Florida Medical Association, De Land, May 12-14.
Georgia Medical Association, Macon, April 21-23.
Illinois State Medical Society, Springfield, May 19-20.
Iowa State Medical Society, Waterloo, May 12-14.
Kansas Medical Society, Kansas City, May 5-6.
Louisiana State Medical Society, Lake Charles, April 20-22.
Maryland Medical and Chir. Faculty, Baltimore, April 27-29.
Mississippi State Med. Association, Hattiesburg, May 11.
Missouri State Medical Association, St. Joseph, May 10-12.
Nat'l Assn. for the Study of Epilepsy, Old Point Comfort, Va., May 10.
Nebraska State Medical Association, Hastings, May 18-20.
New Hampshire Medical Society, Concord, May 19.
New York State Medical Society, Buffalo, April 27-29.
North Dakota State Medical Association, Bismarck, May 12-13.
Ohio State Medical Association, Cincinnati, May 4-6.
Oklahoma State Medical Association, Bartlesville, May 11-13.
South Carolina Medical Association, Greenwood, April 20-22.
Tennessee State Medical Association, Nashville, April 13-15.
Texas State Medical Association, Ft. Worth, May 4-6.
West Virginia State Medical Association, Huntington, May 12-14.

PHILADELPHIA COUNTY MEDICAL SOCIETY

Meeting held Feb. 24, 1915

The President, DR. E. E. MONTGOMERY, in the Chair

Foreign Bodies in Rectum

DR. LEWIS H. ADLER, JR.: A man, aged 60, had been wearing a so-called pile supporter in the anus for a long time. It slipped within the bowel and could not be removed. It felt like a door knob. Under ether I extracted the foreign body, which proved to be the handle and valve of a steam radiator pipe. The man was addicted to masturbation and had employed the instrument to further the habit.

A woman, aged 42, about six years previously, thought she was pregnant. After six months' suppression the menses returned. Two years later she contracted diarrhea, which has continued with intermissions of two or three months. Six months ago she experienced considerable pain and tenesmus low down in the pelvis and about the rectum. As many as a dozen paroxysms a day would occur. About two months ago she passed from the rectum what she termed "a bunch of bones" and a month later a piece of skull. Digital exploration of the rectum revealed a mass situated about 4 inches up the bowel anteriorly which felt very much like the united halves of a clam shell when half open, the edges being sharp and exposed. The tissues in which the mass was imbedded were greatly hypertrophied. A few small pieces of bone were removed at this time by breaking them off, but it was soon evident that the larger mass could not be extracted except under general anesthesia. The patient was etherized, the sphincter dilated and the mass of bones removed. Two possible conditions present themselves as causal: A dermoid cyst, or the product of an extra-uterine fetation. Since the essential symptoms of the dermoid cyst were not present, and in view of the previous history, I am inclined to the opinion that her condition was due to the latter cause.

DISCUSSION

DR. T. HEWSON BRADFORD: A man presented himself for treatment with symptoms of tenesmus. The day before he had eaten what is termed "pigs in a blanket"—an oyster between bacon, held together by a toothpick. He swallowed oyster, bacon and toothpick. A mass was easily felt in the rectum. It was evident that the toothpick had broken and passed through the alimentary tract. By introducing a speculum into the anal aperture I was able to see it and deliver it.

Case of Chronic Interstitial Nephritis; Double Hydrothorax, with Apparent Arrest

DR. JAMES M. ANDERS: A man, aged 44, became ill in August, 1912, with dyspnea on exertion. In October there was distress in breathing, which gradually grew worse and prevented sleep. May 28, 1913, there were signs of fluid in the left pleural sac, but no external edema. The urine contained a trace of albumin, and tube casts, which have gradually increased in amount and number, with failing compensation. The signs of moderate dilatation of the heart later became pronounced, accompanied with a canter rhythm of the heart. The blood pressure was moderately increased but never high. The treatment consisted of rest, both physical and mental, restriction of fluid intake and of food to milk, cereals, bread and butter, fruit juices, lettuce and the like. Cardiac stimulants such as digitalis, strychnin, caffein citrate, spartein sulphate and nitroglycerin aggravated the distress of breathing and the general discomfort of the patient, and failed to prevent recurrence of the hydrothorax. Dec. 2, 1913, the left chest was aspirated and 3 pints of serous fluid removed. Six days later an equal amount was withdrawn from the right chest and thereafter the two sides alternated at intervals of about a week until April 4, 1914, when I began to tap both sides at one sitting, aspirating fourteen times in all. In July, 1914, the left side began to retract, and the quantity of serum from the left pleural sac to diminish. Intervals between tappings became longer but the amount of fluid removed (3 pints) remained unchanged for the right side until the date of the last aspiration, Oct. 29, 1914, when it was about half. Since this time there has been no recurrence of the transudate on either side of the chest. The general tendency to recurrence of the serous fluid was maintained until the preparations of digitalis generally employed were replaced by digipuratum. The commencing dose was one-third grain every third hour, which has been reduced to one-fourth grain every fourth hour. The urine now contains a strong trace of albumin and a few narrow hyaline casts; the blood pressure is 167 systolic; 135 diastolic. While degenerative changes are obviously continuing in the kidneys, the man's general condition is markedly improved.

Carcinoma of Uterus in a Woman Twenty-Four Years of Age

DR. P. BROOKE BLAND: The patient, aged 24, was admitted Jan. 21, 1915, and discharged cured, February 13. Her last normal menstrual flow occurred in September. She was married at 18 and had had two pregnancies terminating prematurely. Her menstruation in October was two weeks overdue; in November, normal; in December she had severe cramps for two days, passed large clots of blood and had been bleeding daily for six weeks before she presented herself at the hospital. Bleeding was aggravated by a vaginal examination. There was backache; there were no bladder or rectal symptoms. Loss of weight and strength had been progressive. Blood count, January 23, was hemoglobin, 80 per cent.; white cells, 13,600; red cells, 4,890,000; color index, 8. The upper part of the vagina was the site of a large round mass with an irregular surface, more or less granular. The surface was soft in consistence but the base of the mass was firm, hard and cartilaginous. The surface was friable, broke down readily under pressure and bled freely after manipulation. The surface of the tumor extended to the vaginal fornices, but the uterus was freely movable and there was no evidence of broad ligament infiltration. Operation was done, January 26. A moderately large mass was discovered at the bifurcation of the left iliac vessels. A radical Wertheim operation was performed, and the patient made an uninterrupted recovery.

The diagnosis of squamous-cell epithelioma of cervix with metastasis to pelvic tissue was given in the laboratory report.

Papillary Cystoma of Ovaries with Ascites

DR. F. HURST MAIER: The patient, aged 30, unmarried, with negative family history and regular menstruation, was in good health until September, 1912, when she noticed an enlargement of the abdomen. From that time until December she lost 10 pounds and suffered from lack of appetite and general weakness. There were the ordinary signs of ascites, but no edema of the legs or eyelids, and no cardiac disease; the urine was normal in quantity and quality. There was apparently no hepatic trouble. Ehrlich's diazo test was negative; von Pirquet, positive. Vaginal examination showed the presence of an ill-defined, resisting, immobile mass on each side of the uterus. Operation confirmed the diagnosis of papillary cystoma of the ovary. Besides the free fluid present, the left ovary was the seat of a papillary growth the size of a child's head, and the right of a medium-sized grapefruit. The uterus was free; there was little involvement of the intestines, but the surface of the omentum was thickly studded with secondary papillomatas.

Two Cases of Multiple Serositis

DR. ELIZABETH L. PECK: A woman, aged 37, had pains in her chest in August, 1910, and was not well in the autumn. In December she had an effusion in her knee joint but could recall no injury. This subsided, and there has been no recurrence. In December she had pleurisy with effusion, marked on the left side, but involving also the right base. From this she made a fair convalescence. Her last menstruation was in February, 1911. For the next three months, when the period was due violent attacks of pain and vomiting occurred. In July there was recurrence of the pain and vomiting, and the liver began to enlarge and there was some ascites. In December the effusion was marked with cyanosis, shortness of breath and failure in strength; there was infiltration of the right lung. Exploratory incision was followed by shock. Six pints of fluid with a specific gravity of 1.021 and a considerable albumin content were removed. The liver reached nearly to the umbilicus, and to touch gave a sensation of soft roughness. There was no evidence of tuberculous invasion. The pelvic organs were markedly atrophic. A slow and partial recovery ensued. In March, 1914, an acute pulmonary congestion occurred from which the patient rallied slowly. In July, 7 pints of serum were removed. Another tapping was required in October, and about every four weeks since that time, the amount varying from 10 to 15 pints, with a considerable amount being left. The patient is fairly comfortable. Both pleura contain fluid to about the angle of the scapula, and pleuritic frictions are heard above the spine of the scapula on the left. The heart is atrophied, the heart tones good, the appetite and digestion excellent, except when the pressure becomes extreme. The required time for paracentesis is no greater than when a large portion of fluid is removed.

The second patient was also a woman, aged 58. She had always been healthy. In February, 1913, she had a febrile attack with much backache. In August the pains became severe and she lost weight. In June, 1914, diarrhea began and her weight fell from 118 to 76. Under treatment directed to lessening peristalsis and relief of pain, improvement occurred. In December an eruption resembling erythema nodosum appeared on the legs and both feet, and the legs were much swollen. Ascites appeared and increased rapidly, and an effusion occurred in both pleurae, reaching to the level of the spine of the scapula. In January, 1915, 7 pints of fluid were removed by paracentesis. Following this the pleural effusion decreased rapidly. The swelling of the legs has entirely disappeared, but pain in the back persists at about the level of the waist. The area of dulness is more marked on the right side, although the fluid level changed with position, denoting probably some deforming peritonitis of the mesenteric attachment which allows the abdominal contents to float more readily in one quadrant than in another. The gastro-intestinal condition is poor and the patient has lost strength rapidly. The blood is nearly normal, except that coagulation time is eight and one-half minutes. The urine analysis is negative except for its high indican content.

DISCUSSION

DR. JAMES M. ANDERS: I have long felt that most of the cases of multiple serositis could be referred to tuberculosis. I have also seen a certain number of instances following a characteristic form of Pick's disease. Whether there is a multiple serositis which cannot be referred to either one of these conditions I think is somewhat doubtful.

DR. JOSEPH SAILER: Multiple serositis is comparatively rare. I think it only fair to conclude from the number of reported cases in which evidence of tuberculosis has been sought and not found that there must be cases of Pick's disease in which tuberculosis is not the etiologic factor. A remarkable feature is the rapidity with which the serous cavities refill. So far as I know, there is no treatment. We can prolong the life of the patient by relieving pressure from time to time.

Unusual and Interesting Cases of Syphilis

DR. JAY F. SCHAMBERG: A man, aged 62, applied for treatment of a growth on the penis which had existed for several months. There was history of persistent fever for several weeks with a temperature at night of 101 F. The man had lost 25 pounds in weight. On the trunk there was an eruption quite different from that of roseola syphilitica. Despite negative Wassermann tests he was placed on antisyphilitic treatment. Within forty-eight hours the fever had ceased and within three weeks he had regained his loss in weight. A man, aged 42, had on the mucous border of the lower lip a nodular pinkish elevation. There was no induration. An enlarged submaxillary gland aroused suspicion. The Wassermann reaction was strongly positive. After three weeks of vigorous antisyphilitic treatment the Wassermann reaction was again strongly positive. Despite the continued positive reaction I believe the early recognition and treatment of this case have lessened the chance of involvement of the central nervous system. A man, aged 56, had a syphilitic infection dating back twenty-five years. He had osteitis of the tibia with rheumatoid pains. He had also the Argyll Robertson pupil. This man has had twenty-three intravenous infusions of salvarsan and a course of mercurial injections. The Argyll Robertson pupil has practically disappeared and the man's general health is excellent. There is a low grade interstitial nephritis, but the number of casts

in the urine is less than before treatment. I believe the strongly positive Wassermann reaction, which we cannot influence, indicates the presence of the treponemes in the cerebral cortex which we cannot reach. The man regards himself as well, but understands that he must be under medical treatment. The intravenous infusions which he received were not only without damage to the kidneys, but also with benefit and with the arrest and disappearance of symptoms of paresis and other manifestations of syphilis.

CHICAGO SOCIETY OF INTERNAL MEDICINE

Meeting held Feb. 22, 1915

The President, DR. JAMES B. HERRICK, in the Chair

Influence of Operative Procedures for Gastric and Duodenal Ulcers on Gastric Motility and Secretion

DR. WALTER W. HAMBURGER: It is generally conceded, both clinically and experimentally, that motor insufficiency and hypersecretion play the leading rôle among the various factors responsible for chronic ulcer of the stomach. It follows, therefore, that in the treatment of ulcer, therapeutic procedures should be devised to control these two important factors. The surgical procedures instituted for the cure of gastric and duodenal ulcer are legion. Scant inquiry is devoted to the ultimate results of these operations; little thought to the permanent relief of symptoms, to the healing of the ulcer and the prevention of recurrence; no consideration to gastric function, particularly gastric motility and secretion. The cases forming the basis for this study comprise seventeen—nine gastric and eight duodenal ulcers. Of the seventeen cases, eight patients received no or only partial relief from their complaints; nine resulted in marked benefit or complete cure. The cases were examined for the most part on an average from three months to two years following operation. So far as possible, all cases were submitted to complete physical examination, test breakfast and motor meal, and Roentgen examination before and after operation. The gastric ulcers divide themselves into two groups—lesser curvature ulcers (four cases) and pyloric ulcers (five cases). From this series the following conclusions may be drawn: Gastro-enterostomy performed without definite surgical indications (stasis—hypersecretion) is liable to convert normal gastric function to abnormal. Gastro-enterostomy with definite surgical indications is liable to fail and increase stasis and hypersecretion, if the pylorus be not excluded. Best results, with relief of stasis and hyperacidity, are obtained by pylorectomy (or pyloric exclusion) plus gastro-enterostomy. In the cases of pyloric ulcer, excision and closure are of greater importance than in ulcer of the lesser curvature. Postoperative hypersecretion (without stasis) has several interesting problems. From a clinical standpoint, it is likely that in cases showing acid contents after motor meals the explanation lies not, as has been thought, in postoperative stasis, but in postoperative hypersecretion. In duodenal ulcers, as in gastric ulcers, pyloric exclusion plus gastro-enterostomy was attended by best results. Cases with normal preoperative findings developed postoperative stasis and hypersecretion, similar to gastric ulcer. Non-relief from surgical interference in gastric and duodenal ulcer is due to (1) lack of properly placed surgical indications; (2) lack of thorough and prolonged preoperative medical treatment; (3) failure to devise proper surgical procedure to meet the individual case, and (4) lack of prolonged postoperative medical treatment.

DISCUSSION

DR. BERTRAM W. SIPPY: It has long since been recognized that there is no operative procedure capable of making the stomach empty itself any quicker than normal time. The old idea of immediate drainage is still prevalent in the minds of a great many, and by immediate drainage we mean drainage that occurs relatively early—it is hardly fair to speak of it as immediate drainage. Six years ago I reported something like eighty gastro-enterostomies in which I tested the motor power and found that the stomach did not empty itself appreciably earlier than normal. About 5 per cent. of the cases had delayed motility. Because the stomach does empty itself in normal time after gastro-enterostomy, an ulcer of the duodenum, with its retention of food and secretion, is very much benefited, because the duration of the corrosion is reduced to the normal time that gastric juice and food are present in the stomach. If our notion as to what keeps an ulcer from healing is correct, what are we accomplishing with medical treatment? The Leube management, by lessening the acidity, lessens the amount of irritation to the ulcer and duodenum, and in that way causes the stomach to empty itself in the normal way, to my notion. If it is the corroding acid juice keeping the ulcer from healing, why not do away with it entirely? That is what we have been doing for some time. In our management of these cases we see to it that there is no free acid in the stomach from early morning to late at night, and there is no secretion at night, and in that way the one thing that keeps the ulcer from healing is removed. That seems to me the important thing.

DR. RALPH C. BROWN: I would like to ask Dr. Hamburger whether the cases in which he found a postoperative hyperacidity had been found normal, so far as the acidity was concerned, before operation? To my mind, we have never seen a case in which no hypersecretion or continued secretion was present before operation in which tests after operation have shown it to be present.

DR. WALTER W. HAMBURGER: The postoperative hypersecretion which we have observed occurred particularly in those cases in which before operation there were normal findings; in other words, cases which probably should not have had surgical interference. We have had three or four cases in which there was apparently a discrepancy between the bismuth meal and the seven-hour test, which I believe has been due to hypersecretion and not true stasis. The same cases before operation had shown normal acidity, but after operation showed hyperacidity and hypersecretion in a large amount. These three or four cases in a small series were rather striking, occurring almost exclusively in cases which had no distinct indication for operation, and showed no special reason for a gastro-enterostomy. It is possible that postoperative hypersecretion occurs in surgery of other organs—for example gall-bladder or appendix or from narcosis alone. We hope to test this out in the near future.

The Blood Pressure in Pneumonia

DR. FREDERICK TICE: From a clinical standpoint, the mode of death in pneumonia is of the greatest importance. On this determination the prognosis and treatment must necessarily in greater part depend. It is safe to say that the larger number of clinicians will accept the statement of von Jurgenson that "patients who die of pneumonia are killed by cardiac insufficiency." One of the important problems in the study of pneumonia is that associated with the causative factors of the cardiac failure. Regardless of a few exceptions, it was formerly quite generally accepted that the myocardium was at fault, until Romberg and his associates investigated the problem experimentally, and arrived at the conclusion that the circulatory failure invariably followed an exhaustion or paralysis of the vasomotor center in the medulla. Newburgh and Minot, in their clinical study of pneumonia, among other findings, arrived at the conclusion that the blood-pressure curve did not suggest a failure of the vasomotor center. This conclusion has been amply confirmed experimentally by W. T. Porter, L. H. Newburgh and I. Newburgh. They were able to demonstrate that the vasomotor center was not impaired in fatal pneumonia. Even more convincing are the microscopic findings of Willson as determined in the fatal pneumonias. In every instance he was able to detect myocardial changes due either to a toxemia or to a local infection. On the experimental findings of Romberg and his associates, G. A. Gibson formulated a statement in reference to the relation of the blood pressure to the pulse rate, known as the Gibson rule, which is as

follows: "When the arterial pressure, expressed in mm. Hg, does not fall below the pulse rate, expressed in beats per minute, the fact may be taken as of excellent augury, while the converse is equally true. From the work of the last few years in my own wards no fact is more certain than this."

During the past few months a careful clinical study of the application of this rule has been made of the pneumonias admitted to Ward 8, medical service at the County Hospital. In each instance a careful record was made of the pulse, temperature and respiration rate every four hours. The systolic blood pressure, by the auscultatory method, was determined at least every twelve hours. From these records a chart was made showing the pulse-rate and blood-pressure curves. For convenience, the temperature curve as well as the time and amount of digitalis administered was also included. The number of pneumonias so charted includes twenty-two cases, which may be divided, for further study, into two groups according to the relative position of the blood pressure above or below the pulse rate. In the first group of thirteen cases, ten, or 76.9 per cent., complied with the rule, while in the second group of nine cases, five, or 55.5 per cent., were positive. Of the total of the two groups, twenty-two cases, fifteen, or 68.1 per cent., verified the observations of Gibson. A reasonable explanation of the three discrepancies in the first group is to be found in the presence of a nephritis in two and a myocarditis and obesity in the third.

In the second group, of the four deviations from the rule, two patients recovered, both of whom were comparatively young, with soft, elastic vessels, in which presumably a relatively lower pressure existed before the onset of the pneumonia or, at least, were able to withstand a greater depression of the circulation. Excluding the five cases in which a reasonable exception existed, of the remaining seventeen only two failed to comply with the rule. Aside from the prognostic significance of the blood pressure and pulse ratio, it has been of the greatest assistance and satisfaction as a guide to the administration of cardiac stimulants. In some, no stimulation was used, while in others, one or two intravenous injections were sufficient to reduce the pulse rate, increase the blood pressure and produce a crossing of the curves.

From the cases observed the following conclusions are drawn: 1. As a means of prognosis, the Gibson rule was verified in 88.2 per cent. of the cases. 2. As a guide in the treatment, it was of the greatest assistance.

DISCUSSION

DR. ROBERT H. BABCOCK: This paper emphasizes the importance of much more accurate sphygmomanometric readings. My observation in pneumonia cases since Gibson's rule was called to my attention has verified Dr. Tice's findings.

DR. W. S. HARPOLE: I should like to ask Dr. Tice if it is his impression that the tendency of the blood pressure in all cases of pneumonia is to be lower than in health? I had that impression, but I have had the opportunity of observing only a few persons whose constant blood pressure was known. I saw a woman not long ago who had a pressure that ran from 180 to 200. She had a typical pneumonia, which she passed through safely, but during the pneumonia her blood pressure was from 140 to 150 all the time. It is my impression that the tendency of the toxin of the pneumococcus is to reduce the blood pressure.

DR. FREDERICK TICE: In answer to Dr. Harpole's question, Howell in his article has emphasized the necessity of knowing the blood pressure previous to the onset of the pneumonia, and particularly in the application of the Gibson rule. I believe from the records that one would be forced to conclude that the blood pressure in pneumonia is relatively lower than the average.

Etiology of Chronic Bronchitis, with Special Consideration of Those Forms Associated with Bronchial Asthma

DRS. KARL K. KOESSLER and ADELBERT M. MOODY: The anaphylactic shock associated with bronchial spasm is the result of the parenteral entrance of fractions of foreign protein into the circulation, and their action on the smooth muscles of the bronchi. If we, therefore, state that the asthmatic attack is an individual case of anaphylactic shock in the human being, we are forced to the conclusion that the underlying error in the metabolism of asthmatics must lie in the parenteral resorption of the foreign protein or toxic substances derived from protein. In two forms of asthma these statements have been experimentally proved by one of us, namely, in pollen asthma and egg asthma. However, the greatest number of asthmatics do not belong in this group.

The carefully taken histories of the greatest number of asthmatics shows over and over again the following facts: The first attack of asthma started after a cold, tonsillitis or grip of several weeks' or months' duration. Second, every subsequent attack or series of attacks is introduced by a new cold or bronchitis coming on, as a rule, in the time of the year when nasobronchial infections are prevalent. Third, a good number of asthmatics are subjects of chronic bronchitis, from which they suffer more or less, even in the intervals between the attacks. This bronchitis is usually regarded as a concomitant affair of subordinate nature which develops secondary to the asthma. Contrary to this view, we hold that in most cases of true bronchial asthma the causative factor of the disease lies directly in the bronchi, that the concomitant focal infection and the bronchitis caused by it constitute the primary condition, and that the asthmatic patient has become sensitized or anaphylactic to the infective agent causing his cold and his bronchitis. A bacteriologic study of the bronchial exudate of twenty-eight patients suffering from bronchial asthma showed in every instance, besides the common aerobic organisms — pneumococcus, streptococcus, influenza bacilli and *Micrococcus catarrhalis* — the presence of anaerobic organisms, and under these especially three forms: (1) a Gram-negative, fusiform-like bacillus, which produces a putrefactive odor in the culture; (2) a Gram-negative, very small bacillus, which produces characteristic black colonies on blood agar, and (3) a very small streptococcus. These three organisms live in a certain form of symbiosis, and are in every case present together in the anaerobic tube. The rôle which these anaerobic organisms play in the production of parenteral resorption of the split protein products is probably a twofold one: (1) They form products of putrefaction (amins) which on resorption lead to a spasm of the smooth muscles of the bronchi, and (2) they produce areas of liquefaction necrosis in the epithelial layer of the bronchial mucosa and submucosa which permits a rapid resorption of the toxic products *in loco*. In three cases the biochemical examination of the sputum gave a characteristic Pauly reaction with diazobenzenesulphonic acid after excluding the presence of tyrosin, thus proving the presence of hystidin or hystamin, the latter formed by decarboxidation under the influence of the putrefactive organisms.

There exists a certain form of chronic asthma-bronchitis which is due to a tuberculous infection. We do not refer here to the more common forms of tuberculosis of the bronchial lymph glands, which by pressure on the trunk of the vagus lead to bronchospasm, but to forms of chronic bronchitis of a benign character with more or less emphysema, which were first described in France by Bardan or by Piery as tuberculosis fibrosa lenta cum emphysemate. The characteristic Roentgen findings usually show an increased hilus shadow from which numerous fine lines radiate in all directions of the lung tissue toward the periphery. There are often dense disseminations over the diaphragmatic pleura on one side, which show considerable thickening. In this form of asthma-bronchitis, repeated examinations fail to show any acid-fast tubercle bacilli, but in the greater number of cases Much's granular form of the tubercle bacillus could be demonstrated, which on injection into the guinea pig produces typical tuberculosis. But even in this form of asthma, when the aerobic germ is the tubercle bacillus, the anaerobic microorganisms could always be demonstrated at the same time in the bronchial exudate.

DISCUSSION

DR. ROBERT H. BABCOCK: The only possible difference in my view of bronchial asthma from Dr. Koessler's, if I have understood him correctly, is that I hold that in many cases of bronchial asthma with chronic bronchitis the bronchitis was not the primary source of the infection. There is often a primary focus somewhere else. A case I have in mind was one of a man who had been ill for something over two years with bronchial asthma, for two months bedfast, unable to lie down, presenting a typical picture of bronchial asthma, chronic bronchitis, emphysema and a dilated heart. The only primary focus I was able to discover was a small alveolar abscess at the root of one of his teeth. After extraction of the tooth and cleaning of the abscess cavity the man began slowly to improve, but was not completely relieved. Finally I decided to have a culture made, which showed an anaerobic fusiform bacillus which gave forth a foul odor. Vaccines were prepared and the man put under treatment, with most excellent results. I believe that this work is opening up to us a most encouraging line of treatment for this very distressing malady.

DR. KARL K. KOESSLER: I agree with Dr. Babcock. I omitted to speak about the problem of local infection in parts of the body other than the bronchial mucosa, but I agree that the primary focus might be in an empyema or alveolar process. In our experience with the vaccine treatment, I want to emphasize that our results have been, on the whole, very encouraging. However, if the anaerobes are not in the vaccine I believe that the result will be mediocre. It seems to be necessary to have these anaerobic organisms in the vaccine in order to get the desired result.

DR. JAMES B. HERRICK read a paper entitled "Pulsus Alternans Detected by the Sphygmomanometer," which appeared in THE JOURNAL, Feb. 27, 1915, p. 739.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

March, IX, No. 3, pp. 189-260

1 *Schick Toxin Reaction for Immunity in Diphtheria. J. A. Kolmer and E. L. Moshage, Philadelphia.
2 Blue Sclerotics Associated with Brittle Bones (Patient Two Years Old). C. Herrman, New York.
3 Chemical Composition of Diarrheal as Compared with Normal Stools in Infants. L. E. Holt, A. M. Courtney and H. L. Fales, New York.
4 *Studies in Fat Indigestion. C. H. Dunn, Boston.
5 Study of Certain Cases of Infantile Diarrhea During Summer of 1914. A. A. Day and J. R. Gerstley, Chicago.

1. Schick Toxin Reaction for Immunity in Diphtheria.—Kolmer and Moshage summarize their work as follows: 1. The toxin skin reaction is a valuable and reliable method for detecting susceptibility to diphtheria. 2. Persons reacting negatively to this test usually contain at least $\frac{1}{20}$ unit of diphtheria antitoxin per cubic centimeter of serum, and this amount of antitoxin is probably sufficient to protect against infection. 3. Persons reacting weakly or strongly positive usually contain less than $\frac{1}{40}$ of a unit of antitoxin per cubic centimeter of serum or none at all. These persons may be regarded as susceptible to diphtheria and in the event of exposure to infection should be passively immunized with an injection of antitoxin. 4. About 40 to 50 per cent. of children ranging from 1 to 15 years of age react positively to the toxin test; this means that the preliminary use of the toxin test will eliminate the necessity of administering prophylactic doses of antitoxin to about 50 per cent. of children. 5. The toxin reaction indicates that the immunity conferred by an injection of antitoxin begins to disappear after ten days and has generally passed away entirely after four weeks. 6. The increased susceptibility of persons with scarlet fever to diphtheria is shown by the toxin reaction; even after the injection of antitoxin about 10 per cent. are susceptible within ten days. 7. According to the toxin reaction the immunity conferred by an attack of diphtheria is usually of short duration or entirely absent. 8. The most practical application of the toxin reaction consists in applying the test as a preliminary measure to all persons who have been exposed to diphtheria and immunizing only those who react positively.

4. Fat Indigestion.—As to the treatment of severe cases of fat indigestion Dunn states that the milk modifications used must be low in fat, average in carbohydrate, comparatively high in protein. The extra sugar should be maltose. A certain number of the milder cases will do well on this treatment. Severe resistant cases are those in which the patients cannot gain on a low quantity of fat and cannot tolerate an increase. A large number of cases are so severe and resistant that they can be saved only by human milk. Breast-milk will save most of these cases, even the severe ones, if used in time. It should always be used in resistant cases, whenever it can be obtained. Even a little breast milk is of value, and may save a patient that would otherwise be lost. After a period of breast-milk feeding, many cases are found no longer severe and resistant to artificial feeding. If breast milk cannot be obtained, the feeding is very difficult and the outcome uncertain. Excessive increase of carbohydrate or protein will not help these severe cases, and may do harm; Dunn believes that not more than 7 per cent. carbohydrate or 3 per cent. protein should be given. Whey mixtures are of no help except sometimes in very young babies who vomit curds; they may do harm. Giving the protein in the form of precipitated casein may be tried, and may help in some cases. There is not sufficient evidence of its value to indicate its use as a routine.

The only way to manage these resistant cases without breast milk is to keep the fat low, and be prepared for a period of loss of body weight which may be prolonged. If they begin to gain when the fat is increased, it is no sign of permanent improvement; they may go to pieces at any time. Frequent examinations of the stools for free fat and excessive soap must be made. In the presence of free fat, or in the continuous or increasing presence of excessive soap, the fat should be reduced, even if the baby is gaining. If a "blow-up" occurs when the fat is increased, the fat in the food should be reduced to zero, and then worked up again, slowly. Frequent "blow-ups" diminish the tolerance for fat. The best hope of eventually obtaining an increase in tolerance of fat sufficient to permit a gain in weight is to avoid overfeeding with fat for a long time, even if much weight is lost.

American Journal of Medical Sciences, Philadelphia

March, CXLIX, No. 3, pp. 313-468

6 Fundamental Principles Involved in Use of Bone Graft in Surgery. F. H. Albee, New York.
7 *Gastric Ulcer. J. B. Deaver, Philadelphia.
8 Pain and Other Sensory Disturbances in Diseases of Spinal Cord and Their Surgical Treatment. C. A. Elsberg, New York.
9 Severe Jaundice in Newborn Child Cause of Spastic Cerebral Diplegia. Report of Cases. W. G. Spiller, Philadelphia.
10 *Prevalent Fallacies Concerning Subacromial Bursitis. Its Pathogenesis and Rational Operative Treatment. W. M. Brickner, New York.
11 *Clinical Interpretation of Wassermann Reaction, with Special Reference to Cholesterinized Antigens. J. A. Kolmer and J. F. Schamberg, Philadelphia.
12 Colonic and Pericolonic Abnormalities. G. I. Jones, U. S. Army.
13 Syphilis of Stomach. Report of Cases. W. G. Morgan, Washington, D. C.
14 *Value of Typhoid Vaccine in Treatment of Typhoid. E. B. Krumbhaar and R. Richardson, Philadelphia.
15 Physical Basis of Chronic Infections and of Recovery Without Immunity. A. P. Hitchens, Glenolden.
16 Keratosis Pilaris of Scalp. R. L. Sutton, Kansas City, Mo.
17 *Serodiagnosis of Rabies. M. G. Wohl, Philadelphia.

7. Gastric Ulcer.—Deaver advises that after opening the abdomen and locating the ulcer the stomach should be opened and the base of the ulcer inspected. If the vessel is seen it should be ligated directly by transfixion. If, as is more commonly the case, no erosion or vessel is seen a stitch of catgut should be whipped around the base as well

as the edges of the ulcer, with the object of occluding the vessel supplying it. The stomach may then be closed and gastro-enterostomy quickly performed. In cases in which the ulcer cannot be located by inspection and careful examination of the exterior of the stomach, open widely the stomach through the anterior wall and inspect its anterior throughout. The latter treatment applies to chronic ulcer more than to acute ulcer. That the danger in opening the stomach ulcer cannot be great, Deaver states, is proved by the fact that he has operated in thirty-three cases of acute perforation of the stomach and duodenum with but one death. Deaver urges the propriety of acting on a well-reasoned suspicion that the appendix is responsible for much of the serious diseases of the upper abdomen.

10. **Subacromial Bursitis.**—The fallacies discussed by Brickner are: 1. That thickening of the bursal walls casts a shadow in the roentgenogram. (It does not). 2. That the calcareous deposit found in many of the cases is in the bursa. (It is beneath the bursa). 3. That subacromial bursitis often arises from vaguely conceived bacterial "toxic" irritation. (Not substantiated). 4. That subacromial bursitis is marked by decided swelling in the deltoid region. (When present at all, in early stage only). 5. That there is a characteristic point of tenderness over the outer aspect of the shoulder just below the acromion margin, and that the absence of this sign indicates, clinically, absence of bursitis. (Absent as often as present). 6. That the routine operative treatment to be recommended is "excision of the entire bursa." (Unnecessary; remove calcareous deposit but give non-operative treatment a trial first.)

11. **Wassermann Reaction with Reference to Cholesterinized Antigens.**—Cholesterinized alcoholic extracts of normal heart, in the opinion of Kolmer and Schamberg, constitute more sensitive antigen in the Wassermann reaction than alcoholic extracts of syphilitic liver and extracts of acetone-insoluble lipoids. The latter extracts are superior to alcoholic extracts of syphilitic liver and rank second to the cholesterinized extracts in antigenic sensitiveness. Of forty-one cases reacting only with cholesterinized antigens no less than twenty were known definitely to be syphilitic and in at least fourteen the diagnosis of lues was most probable. The authors are of the opinion that cholesterinized extracts are best employed in conjunction with non-cholesterinized extracts in performing the Wassermann reaction and very slight positive reactions with the cholesterinized extracts should be interpreted in conjunction with a clinical study of the patient. With a person known to be syphilitic these slight reactions are to be interpreted as positive and as an indication for further treatment. In using cholesterinized antigens the authors claim it is not advisable to work with single units of complement and amboceptor because of the well-known antihemolytic properties of cholesterin, and the corresponding increased likelihood of obtaining false reaction. Cholesterinized alcoholic extracts of heart are easily prepared and are quite stable. It is advisable, however, to retitrate them at frequent intervals as is usual with other antigens. Cholesterinized alcoholic extracts of human heart are probably better than those of beef and guinea pig heart. The latter extracts are particularly prone to become anti-complementary.

14. **Value of Typhoid Vaccine in Treatment of Typhoid.**—That the curative use of typhoid vaccines in the course of typhoid in order to stimulate further antibody formation has a logical theoretical basis, although its mode of action has not as yet been demonstrated experimentally, is maintained by Krumbhaar and Richardson. Practical proof of its value is afforded by the rise in agglutinin curves after such vaccination. The proper use of vaccines in the treatment of typhoid has been found clinically to be without harm, and usually to produce beneficial results. It rarely causes any noticeable aggravation of symptoms, beyond a fleeting rise of temperature. Relapses and complications are diminished in frequency, but not prevented. The increase in size of the spleen, noted by others has not been observed by us. The best results are obtained if the injections are begun early in the disease, especially before the tenth day. A blood culture is more valuable than the Widal test in the early stages. Late in the course of the disease, except in selected cases, the value of vaccines (both theoretically and practically) is more dubious. In the chronic complications of typhoid, such as periostitis and cholecystitis, good results have been obtained from vaccines by other investigators. The contra-indications for vaccine treatment of typhoid are not yet clear.

The authors hesitate to advocate their use in moribund or very toxic cases, during hemorrhages or suspected perforations, or in such complications as pneumonia or otitis in cases in which other micro-organisms are involved. The best dosage has also not been determined. The dosage must vary within certain limits for each patient, and no cut-and-dried rule should be attempted. The more severe the disease the smaller and more cautious should be the dosage. With their methods of preparation the authors felt that the best initial dose for average adult was 50,000,000; if this proved to be the proper amount, two or more larger doses were given usually at three-day intervals.

17. **Serodiagnosis of Rabies.**—The Abderhalden reaction was utilized by Wohl for diagnostic purposes of rabies. He states that the reaction is positive as early as the third day in rabbits subdurally inoculated with fixed virus. Serum of healthy rabbits cause cleavage of brain and placenta tissue, yet to a very light degree.

Annals of Surgery, Philadelphia

March, LXI, No. 3, pp. 257-384

18 *Tonsillectomy in Children from Standpoint of General Surgeon. D. C. Balfour, Rochester, Minn.
19 Mechanism of Production of Hemorrhagic Erosions of Esophagus and of Some Associated Lesions in Ileus. B. F. Davis, Chicago.
20 Surgical Anatomy of Upper and Lower Poles of Thyroid with Reference to Thyroidectomy. N. Ginsburg, Philadelphia.
21 *Uretero-Enteric Anastomosis. W. H. Barber, New York.
22 Studies in Obscure Forms of Prostatic Obstruction and Vesical Atony. B. Lewis, St. Louis
23 *Lymphatic Drainage of Peritoneal Sac. W. C. Woolsey, Brooklyn.
24 *Prevention of Postoperative Adhesions in Peritoneal Cavity. J. E. Sweet, R. H. Chaney and H. L. Willson, Philadelphia.
25 *Technic of Cholecystectomy. E. S. Judd, Rochester, Minn.
26 *Experiments on Surgery of Pancreas. J. E. Sweet and I. H. Simons, Philadelphia.
27 Study of Multilocular Cystadenomata of Retroperitoneal Origin. E. Staehlin, Newark, N. J.
28 Surgical Significance of Intestinal Angioneurotic Edema. A. H. Bogart, Brooklyn.
29 Secondary Ulcers of Stomach and Jejunum. Formation of Calculi Around Unabsorbable Material Used in Suturing Intestinal Mucosa. A. L. Soresi, New York.
30 Clinical Aspects of Colon Stasis. J. R. Eastman, Indianapolis.
31 Roentgenologic Findings in Three Cases of Diverticulitis of Large Bowel. R. D. Carman, Rochester, Minn.

18. **Tonsillectomy in Children.**—A modification of the Waugh method is used in the Mayo Clinic. It has proved satisfactory in the 1,654 cases.

21. **Uretero-Enteric Anastomosis.**—A new method of entero-ureteral operation is proposed by Barber. A meso-ventrad incision 5 cm. long is made in the lower abdomen. Free the ureter from its bed. Divide between two ligatures just cephalad to the bladder. Attach a straight-cutting needle to the cephalad ligature and penetrate the sigmoid colon in a line perpendicular to its long axis. Drive the needle though at a point 90 degrees distant on intestinal wall, thus drawing ureter through each wall. The sigmoid is then suspended within the wound by the usual glass-rod method. The ligated cephalad end of the ureter is allowed to protrude on the skin in which its ligature is fixed by a single suture. The wound is then closed about the sigmoid and the ureter. Six hours later the exposed ureter is incompletely cut and allowed to empty. It may be returned to the lumen of the intestine at any time thereafter, but it is well to retain it under control until its continued patency is assured. One or both ureters may be transplanted in this way within twenty minutes.

23. **Lymphatic Drainage of Peritoneal Sac.**—Absorption of certain solid foreign material injected into the peritoneal sac Woolsey found occurs with marked rapidity, first by a

process of translocation through the cells of the diaphragmatic mesothelium and later through the agency of leukocytes. Such solid foreign material having passed the peritoneal mesothelium is conveyed through the endomysial tracts throughout the diaphragmatic musculature to the lymphatic radicles on the pleural surface of the diaphragm, from these through the various diaphragmatic gland groups to the costoxiphoid glands of Sappey, and from thence through the retrosternal chain of lymphoid tissue to the subclavian vein or thoracic duct. Certain fluids injected into the peritoneal sac followed the same lymphatic absorption lines, whether they coincidently enter the blood stream directly or not. The tissues of the diaphragm take a distinctly active part in absorption from the peritoneal sac and that other areas of parietal peritoneum functionate little if any in the lymphatic absorptive process. Therefore the postoperative postural treatment of pelvic peritonitis as advocated by Fowler has definite pathologic foundation.

24. **Postoperative Peritoneal Adhesions.**—In five cases in which no other means than simple careful technic and covering of the operative area with omentum or mesenteric strips were used by the authors, adhesions resulted in only one case, this being one in which adhesions to the uncovered area were found, the covered areas in the same case being free. In eleven cases in which some type of oil was used in the endeavor to limit adhesions, these were formed in nine cases. In one of the cases in which adhesions were absent, peritonitis caused the death of the animal, only a single case being free from adhesions or peritonitis. In all eleven cases more or less extensive exudation was present. In seven of the eleven cases in which oil was used the phagocytic index was tested, and in all except the first experiment with liquid petrolatum the index was markedly reduced, and even in this case it was not normal. Oil in any form causes an intense exudation of leukocytes into the abdomen and these are inhibited from their normal physiologic function by the presence of the oil, as indicated by the low phagocytic index. Thus it is stated by the authors that oil is contra-indicated, if for no other reason than that anything which causes local migration of these cells and then checks their action simply increases the bulk of foreign material with which the tissues have to deal.

Another interesting fact in respect to oil was noted in that during the first four days following the injection of oil there was an excessive amount of exudation of fluid into the cavity, then in the next four days there seems to be a decrease in the amount of fluid, followed in the last four days of a twelve-day period by again increasing amounts. The explanation offered is that the presence of the oil in the abdomen primarily calls forth an intensive cell exudation. In the process of adjustment absorption begins and the amount is temporarily decreased, but as soon as absorption begins, the lymphatics become plugged with oil and cell detritus and the further increase in the exudation is held within the cavity. This condition then remains for a long period, extensive exudation being present three weeks to a month after operation. That the oil is gradually absorbed by the lymphatics is shown by the presence of oil droplets in the lymphatics of the mesentery and broad ligaments in cases allowed to go for a long period. From experiments with the use of citrate solutions involving seven cases, there was not a single satisfactory result.

25. **Technic of Cholecystectomy.**—Judd's technic does not vary in many essentials from that often described. The important step in the operation is the complete freeing of the cystic duct before it is cut.

26. **Surgery of Pancreas.**—Experiments were made by Sweet and Simons to determine if a part of the pancreas could be separated from the remainder of the organ and successfully implanted in the gut. The processus uncinatus was cut off from the head of the organ, the duct in the proximal stump ligated, and the end of the uncinate process simply implanted in the intestine by dropping it through a longitudinal slit in the gut, which was then carefully closed by fine sutures. The three animals in this series were autopsied after six, five and four weeks. In all three cases the duct in the implanted portion was patulous and of normal size. In two there was no apparent atrophy of the pancreatic tissue. One had atrophied to one-third of the original size; microscopic study of the tissue showed no abnormalities. There was no fat necrosis, perfect anastomosis, and a very few adhesions. The other part of the pancreas was of course entirely normal.

In the second series of three animals an artificial obstruction was attempted by ligature of the ducts with implantation into the intestine of the proximal end of the pancreas after cutting off the uncinate process. The first dog was autopsied after five weeks, and it was found that the new opening into the gut had closed, while a new duct had formed around the ligature of the major duct. The second dog died a week after the operation from distemper pneumonia, and even in this short time a new duct had formed around the ligature of the duct. The third dog, autopsied after five weeks, showed the same result—a new duct circumventing the ligature of the duct. None of these cases showed any gross changes in the organ, no pancreatitis, fat necrosis, or atrophy. In the third series the pancreatic ducts were cut between ligatures and the omentum was interposed between the ends of the ducts in an attempt to prevent the reformation of these ducts. The proximal stump, after excision of the uncinate process, was anastomosed with the intestine. This operation was tried in two cases which were autopsied four weeks after operation. The implanted duct was patulous. The ducts had not reformed and there was no evidence of pancreatitis, or fat necrosis, or atrophy.

Archives of Diagnosis, New York

January, VIII, No. 1, pp. 1-100

32 Pathologic Physiology. J. B. Deaver, Philadelphia.
33 Diagnosis of Abnormalities of Myocardial Function. T. S. Hart, New York.
34 Differential Diagnosis Between Acrodermatitis Chronica Atrophicans and Diffuse Idiopathic Atrophy of Skin. F. Wise, New York.
35 Diagnostic Value of Hyperesthesia of Solar Plexus and Its Relation to Gastropaths. M. Schott, Cleveland.
36 Plea for More Frequent Examination of Lower Bowel in Diagnosis of Disease. J. Gutman, Brooklyn.
37 Colon Bacillus Exaltations. B. G. R. Williams, Paris, Ill.
38 Recognition of Pretuberculous Stage and Early Symptoms of Tuberculosis. A. C. Geyser, New York.
39 Early Diagnosis of Incipient Pulmonary Tuberculosis. C. C. Lawhorn, Milwaukee, Wis.
40 Tetanism. H. B. Sheffield, New York.
41 Cavernous Angioma of Liver in Baby Six Weeks Old. II. Congenital Absence of All Abdominal Muscles. A. Stern, Elizabeth, N. J.
42 "Psycho-Analysis" Word Capable of Wide Usefulness. J. M. Taylor, Philadelphia.

Boston Medical and Surgical Journal

March 11, CLXXII, No. 10, pp. 357-392

43 Superstition and Doctor. O. Wister, Philadelphia.
44 Ten Cases of Diverticulum of Bladder. H. Cabot, Boston.
45 Splenic Anemia. Report of Case. P. E. Truesdale, Fall River.
46 Disturbances of Stomach. H. F. Hewes, Boston.
47 Efficiency of Mixed Toxins (Coley) in Inoperable Sarcoma. Analysis of One Hundred and Thirty-Four Microscopically Proved Cases. T. W. Harmer, Boston.

Cleveland Medical Journal

February, XIV, No. 2, pp. 81-176

48 Prognosis and Treatment of Acute Nephritis. J. Phillips, Cleveland.
49 Perirenal and Peri-Ureteral Tumors. C. A. Hamann, Cleveland.
50 Ventral Hernia. F. E. Bunts, Cleveland.
51 Digitalis. W. G. Alpers, Cleveland.
52 Epithelioma of Pharyngeal Mucosa in Fowl. D. Marine, Cleveland.
53 *Effects of Chelidonin on Smooth Muscles in Intact and Surviving Organs. P. J. Hanzlik, Cleveland.

53. **Effects of Chelidonin on Smooth Muscles.**—Chelidonin is the alkaloid of Chelidoneum majus, which belongs to the *Papaveraceae*. Its empirical formula as given by Schmidt is $C_{20}H_{19}NO_5$, and the most soluble salts are the phosphate and sulphate. In 1892, Meyer studied the general or systemic effects of chelidonin and found them to be closely similar to those of morphin, with the important difference that chelidonin produces practically no subsequent irritation of the central nervous system. Hanzlik undertook to ascertain

the effect of chelidonin on surviving organs and those functions in which the presence of smooth muscle plays an important rôle. Briefly, chelidonin promptly abolishes the spontaneous contractions of the following excised organs: esophagus, fundus and pylorus of the frog's stomach, intestine of cat and rabbit, and pregnant uterus of guinea pig. It removes the effects of pilocarpin, pituitrin, histamin and barium chlorid on surviving organs.

The peripheral blood vessels of the frog previously contracted by epinephrin are more rapidly dilated by chelidonin than by Ringer's solution alone. There is very little or no effect on the untreated vessels. The constriction of the bronchial musculature by histamin in the surviving lungs of the guinea pig is removed by chelidonin. Bronchoconstriction does not occur with mixtures of histamin and chelidonin. Rabbits previously treated with large doses of chelidonin do not show bronchial spasm with the same doses of histamin as untreated rabbits. Chelidonin has no demonstrable effect on the pupil of the excised eye of the frog. In the living rabbit intravenous injection of chelidonin depresses intestinal peristalsis, and large doses remove the stimulant effect of pilocarpin. It appears that chelidonin exerts its main effects on smooth muscle. Therapeutically, chelidonin in Hanzlik's opinion should prove beneficial in the treatment of such symptoms as asthma, colic and various other enteralgias and gastralgias, and particularly in pediatric practice.

Journal of Abnormal Psychology, Boston

February-March, IX, No. 6, pp. 369-436

54 Freud and His School. (To be continued.) A. W. Van Renterghem, Amsterdam.
55 Psychologic Understanding. C. G. Jung, London.
56 Professor Janet on Psycho-Analysis: Rejoinder. E. Jones, London.
57 Freudian Psychology and Psychic Research. H. Carrington.
58 Stammering as Psychoneurosis. I. H. Coriat, Boston.

Journal of Experimental Medicine, Lancaster, Pa.

March, XXI, No. 3, pp. 193-287

59 Relation Between Structure of Epidermis of Rat and Guinea-Pig, and Proliferative Power of Normal and Regenerating Epithelial Cells of Same Species. K. C. Spain, St. Louis.
60 *Liver Function as Influenced by Anesthetics and Narcotics. G. H. Whipple and J. S. Speed, Baltimore.
61 *Cultivation of Treponema Pallidum. H. Zinsser, J. G. Hopkins and R. Gilbert, New York.
62 *Mechanism of Abderhalden Reaction. J. Bronfenbrenner, Pittsburgh.
63 Serum Proteases and Mechanism of Abderhalden Reaction. J. W. Jobling, A. A. Eggstein and W. Petersen, Nashville, Tenn.
64 Influence That Serum Exerts on Trypanosomes. B. T. Terry, New York.
65 Different Amounts of Transformed Atoxyl Produced by Incubating One per cent. and Ten per cent. Atoxyl in Blood. B. T. Terry, New York.
66 Effect of Heat on Transforming and Binding Power of Blood. B. T. Terry, New York.
67 *Influence of Anterior Lobe of Pituitary on Growth of Carcinomata. T. B. Robertson and T. C. Burnett, Berkeley, Cal.

60. **Liver Function as Influenced by Anesthetics and Narcotics.**—Whipple and Speed found that ether anesthesia for a period of two hours usually causes a depression in the phthalein curve during the twenty-four hours following the anesthesia. Paraldehyd in doses sufficient to give anesthesia and stupor for a few hours will give a definite fall in phthalein output when given in considerable amounts. Alcohol causes a drop in the phthalein curve when given in large doses sufficient to cause stupor for a few hours. The drop in phenoltetrachlorphthalein excretion is demonstrated in the twenty-four hours following administration of the drug. A drop in the phthalein curve to two-thirds or one-half of normal indicates a definite liver injury and temporary impairment of function.

61. **Cultivation of Treponema Pallidum.**—The authors believe that the general method of obtaining profuse growth of *Treponema pallidum* in fluid medium without agar, composed of mixtures of slightly acid broth (acidity of 0.2 to 0.8 per cent.) and sheep serum (or ascitic fluid, or horse or rabbit serum) containing autoclaved tissue, in long necked flasks covered with paraffin oil, provides an excellent method of obtaining mass cultures for experimental work and for concentrated luetin preparations. They obtain mass cultures by cultivating for three weeks or longer in these flasks, then centrifugalizing for a short time in large tubes to remove clumps of precipitated protein, decanting and then centrifugalizing at high speed in small tubes to throw down the organisms. Since many of the treponemata are entangled in the sediment first precipitated, a larger yield can be obtained by grinding this sediment in a mortar with salt solution and treating this material separately.

62. **Mechanism of Aberhalden Reaction.**—Bronfenbrenner regards the Aberhalden reaction as being specific. He says that the properties of serum on which it depends develop in experimental animals simultaneously with antibodies during the process of immunization. It is impossible to observe by direct methods the presence of digesting ferments in the blood of immune animals. The Aberhalden test may be resolved into two phases. A dialyzable substance appears in the second phase and is the result of the autodigestion of serum. The autodigestion of serum in the Aberhalden test is due to the removal of antitrypsin from the serum by the sensitized substratum.

67. **Influence of Pituitary on Growth of Carcinomata.**—Robertson and Burnett propagated the Flexner-Jobling carcinoma by inoculation into the axillary region through two generations. The percentage of takes was high, varying between 60 and 80 per cent. Half grown or adult animals were employed to propagate the tumors, and also in the experiments. Ox pituitaries were dissected out of the connective tissue capsule and the anterior lobe was separated, macerated between two surfaces of ground glass, and mixed with M/6 sodium chlorid solution in such proportion that the final volume of the mixture was three times that of the glandular tissue. Four per cent. of tricresol was added and the mixture was shaken and allowed to stand at room temperature for not less than twelve hours. After further shaking the mixture was filtered through glass-wool under pressure. The filtrate was employed in the experiments detailed; it was freshly prepared from time to time. Three c.c. were equivalent to 1 c.c., namely, to approximately 1 gm. of glandular tissue. The administration of emulsions of the anterior lobe of the ox pituitary increased very markedly the rate of growth of the primary tumor in rats inoculated with carcinoma. The growth of small tumors was accelerated relatively more than that of large tumors. This acceleration was only evidenced, however, at a certain stage in the growth of the tumor, subsequent to the twentieth day succeeding inoculation. The administrations did not enhance the tendency of the tumors to metastasize. Liver emulsion did not cause an acceleration of the growth of carcinomata in rats.

Journal-Lancet, Minneapolis

March 1, XXXV, No. 5, pp. 109-134

68 Feeding of Healthy Infant. E. J. Huenekens, Minneapolis.
69 The Inebriate. G. H. Freeman, Willmar.
70 Diagnosis of Intracranial Complications in Diseases of Middle Ear and Accessory Sinuses of Nose. J. C. Beck, Chicago.
71 Treatment of Gonorrheal Ophthalmia. A. E. Smith, Minneapolis.
72 Vaginal Hysterectomy Under Spinal Anesthesia. Report of Case. K. K. Cramner, Minneapolis.

Journal of Outdoor Life, New York

February, XII, No. 2, pp. 33-83

73 Mississippi Valley Tuberculosis Conference. S. C. Kingsley, Chicago.
74 Status of Antituberculosis Work in Mississippi Valley. E. M. Hendriksen, Grand Rapids, Mich.
75 Need of Uniformity in Antituberculosis Education. G. T. Palmer, Springfield, Ill.
76 Chicago Plan for Municipal Control of Tuberculosis: Chicago Municipal Tuberculosis Sanatorium and Its Auxiliary Agencies. T. B. Sachs, Chicago.
77 Publicity—Most Powerful Factor in Indiana's Antituberculosis Fight. W. D. Thurber.
78 Kentucky Wakes Up. R. L. French.
79 Iowa's Ten-Years' Fight. A. E. Kepford.
80 Ohio Public Health Federation. R. G. Paterson.
81 Fight Against Tuberculosis in Cleveland. R. H. Bishop, Jr., Cleveland.
82 Problems of Tuberculosis in Negro of South. D. S. Wilson, Louisville, Ky.
83 Tuberculosis and Negro. A. W. Williams, Chicago.

Kansas Medical Society Journal, Topeka

February, XV, No. 2, pp. 37-70

84 Surgical Treatment of Intestinal Stasis Due to Cecum Mobile and Coloptosis. G. M. Gray, Kansas City.
85 Gleanings from Principal European Eye and Ear Clinics. H. C. Markham, Parsons.
86 Microscope as an Essential to Diagnosis, Prognosis and Treatment of Gonorrhea. P. S. Mitchell, Iola.

Lancet-Clinic, Cincinnati

March 6, CXIII, No. 10, pp. 253-278

87 *Hemolysis Following Transfusion of Blood. B. M. Bernheim, Baltimore.
88 Experimental Studies in Production of Chronic Gastric Ulcer. W. W. Hamburger, Chicago.
89 What Is Atony of Stomach? H. W. Bettmann, Cincinnati.
90 Injury of Head with Oncoming Epilepsy, Negative Abderhalden Reactions, Operation, Drainage of Cyst. B. Holmes, Chicago.

87. Abstracted in THE JOURNAL, Nov. 14, 1914, p. 1785.

Medical Record, New York

March 13, LXXXVII, No. 11, pp. 421-462

91 Syphilis of Stomach. Report of Cases. M. Einhorn, New York.
92 *Treatment of Pyorrhea Alveolaris and Its Secondary Systemic Infections by Deep Muscular Injections of Mercury. B. L. Wright and P. G. White, U. S. Navy.
93 Oral Osteitis in Its Relation to Arthritis. B. C. Darling, New York.
94 Neglected Lateral Curvature. M. Strunsky, New York.
95 Clinical Treatment for Systemic Goiter (Graves' Disease). M. S. Macy, New York.
96 New Method of Increasing Efficiency of Vaccines and of Producing Antiserum. J. S. Wight, Brooklyn.
97 Simple Syringe Method for Transfusion of Citrated Blood in Children. A. Zingher, New York.
98 New Baby Bottle. R. D. Moffett, New York.

92. **Treatment of Pyorrhea Alveolaris by Injections of Mercury.**—Wright and White have treated twenty-eight consecutive cases, all of which have been completely cured in remarkably short periods of time. Of these, nine, or 32.1 per cent., had systemic infections in all probability secondary to pyorrhea, six of these being chronic arthritis, one chronic gastritis, one chronic bilateral facial neuralgia, and one chronic laryngitis. In addition, two others had gonorrheal arthritis. All of these systemic infections, including the cases of gonorrheal arthritis, were also cured. The longest period of time required to effect a cure was forty-one days, the shortest four days. Greatest number of injections required to cure the primary infection in one case six, smallest number one.

The local treatment as administered by White embraces the following: Careful expression of the pus from the pockets, thorough removal of calcareous deposits and tartar wherever found, the extraction of hopeless teeth and roots, polishing of tooth structure, followed by applying to the margin of the gums equal parts of tincture of iodin, tincture of aconit and chloroform continued every other day. The injections of mercuric succinimid should be commenced with the local treatment. The initial injection in a male patient should be 5/5 grain repeated every seventh day, or depending on the condition of the patient, the dose of each succeeding injection may be slightly reduced. In females the dose should be from 1/5 to 2/5 grain less.

Military Surgeon, Chicago

March, XXXVI, No. 3, pp. 205-304

99 Sanitary Work of Army at Vera Cruz. H. P. Birmingham, U. S. Army.
100 Sterilization of Drinking Water by Calcium Hypochlorite in Field. W. J. Lyster, U. S. Army.
101 Proposed Method of Pitching Field Hospital. W. W. Reno, U. S. Army.
102 Mess Efficiency. P. C. Fauntleroy, U. S. Army.
103 Guide to Facilitate Organization and Administration of Independent Sanitary Commands in Field. G. P. Peed, U. S. Army.

New York Medical Journal

March 13, CI, No. 11, pp. 493-548

104 Treatment of Mental Affections as They Are Met with in General Practice. F. X. Dercum, Philadelphia.
105 Syphilis and Its Modern Treatment. V. C. Pedersen, New York.
106 *Diaphragmatic Hernia of Stomach and Omentum. M. S. Kakels and S. Basch, New York.
107 Roentgen-Ray Prevention of Nasal Diseases. S. Tousey, New York.
108 Extensive Creeping Eruption. J. L. Kirby-Smith, Jacksonville, Fla.
109 *How Tetanus May Be Aborted. M. B. E. Sutton, New York.
110 Passive Congestion of Liver Simulating Abdominal Tumor. C. R. Robins, Richmond, Va.
111 Protective Shield for Holmes Nasopharyngoscope. M. Lubman, New York.
112 Septal Perforation in Narcotic Habitués. P. M. Lichtenstein, New York.
113 Christian Science Cures. H. K. Craig, Washington, D. C.
114 Nature and Pathogenesis of Epilepsy. L. P. Clark, New York.

106. **Diaphragmatic Hernia of Stomach and Omentum.**—Kakels and Basch report a congenital case in a male, aged 54 years, with the sac and its contents passing over into the right thoracic cavity. Trouble began two years ago, when, without any assignable cause, he experienced a pain across his upper abdomen, mild at first, but persisting and gradually associated with a feeling of abdominal distention. There was no nausea, chill, vomiting, or dyspnea, but he felt very weak and had drawn face and cold extremities. The next day he remained in bed and another physician was called in, found a much distended abdomen. He resumed business the second day, but for four or five weeks occasionally had sharp pains across the epigastrium, which were relieved by a hot water bag. Early in December, 1913, he had a similar but much milder attack, which was also relieved by a hot water bag. Since the attack of two years ago, he has had frequent attacks of nausea and belching, beginning usually in the late afternoon, often preventing the eating of his supper and gradually, as the hours passed, getting more severe and relieved only by repeated forced vomiting. The vomitus at first consisted only of a little mucus, then increasing amounts of very sour tasting whitish or yellowish fluid, up to two quarts or more, never, however, containing any food. Often he would be kept awake all night and then would be too exhausted to get up, but seldom missed more than one day from business. These attacks had no definite relation to the quantity or quality of his food; they occurred at first about every two months, but since two or three months about once a week. During the intervals between attacks, he had no indigestion whatever. In the last two years he lost about 35 pounds; his strength and appetite were also much diminished, and a moderate degree of sitophobia had developed.

The operation was in the nature of an exploratory laparotomy for the peculiar gastric disturbances. On opening the peritoneal cavity the greatly distended transverse colon, covered with enlarged vessels, presented itself, occupying the region of the stomach. On pulling this out of the way the gastrocolic omentum and the whole of the great omentum were pulled down and the pyloric end of the stomach was all there was seen emerging from an opening high up in the diaphragm on the left side and behind the liver near the left crus, between the pars vertebralis and the pars costalis. The rest of the stomach with the whole of the great omentum was in the thoracic cavity, outside of and behind the pericardium. After having withdrawn the omentum and the enormously enlarged stomach (three times its natural size), the entire hand was readily introduced into the opening, which was found to extend upward and inward into the right thoracic cavity, through the posterior mediastinum. The greatly distended and enlarged stomach had a distinct constriction about it near the pyloric end, resembling an hour-glass stomach. The stomach had to be pulled from the thorax with considerable force, and when released receded to its abnormal position. The reduction of the hernia on account of the negative pressure above the diaphragm was unsuccessful. The radical cure of this large hernia seemed hopeless. There was a great deal of shock following the manipulations, and the patient succumbed thirty-six hours later. At the autopsy no pleurisy, pneumonia, or peritonitis was found. There was no omentum or stomach in the abdomen except the pyloric end protruding from an opening in the diaphragm. The sac containing the stomach and great omentum was found in the right thoracic cavity reaching as high as the second rib. The hernial sac was made up of peritoneum, lining the under surface of the diaphragm and the parietal pleura of the thoracic cavity.

109. **How Tetanus May Be Aborted.**—Sutton advises to wash the wound with water first, then with hydrogen peroxid; next soak in tincture of iodin U. S. P., and put in an iodin pack, removed every twenty-four hours till danger of infection is past.

Oklahoma State Medical Association Journal, Muskogee

March, VII, No. 10, pp. 307-346

115 Primary Gland Tuberculosis of Mesentery. Report of Case. W. D. Berry, Muskogee.
116 Specialist as He Appears to Us. D. A. Myers, Lawton.
117 Treatment of Pannus. J. B. Ferguson, Sallisaw.
118 Nose, Anatomically Considered with Special Reference to Reflexes and Constitutional Diseases. W. E. Dixon, Oklahoma City.
119 Injuries of Eyeball and Its Appendages. E. F. Davis, Oklahoma City.
120 Heterophoria. M. K. Thompson, Muskogee.

Public Health Journal, Toronto

March, VI, No. 3, pp. 103-150

121 Recent Developments in Sewage Disposal. G. W. Fuller, New York.
122 Some Aspects of Whooping Cough. G. A. Campbell.
123 Are Our Training Schools Educative? M. A. MacKenzie.

Surgery, Gynecology and Obstetrics, Chicago

March, XX, No. 3, pp. 253-380

124 *Uterine Prolapse with Associated Pelvic Relaxation. C. H. Mayo, Rochester, Minn.
125 *Unusual Cases; Points in Diagnosis and Treatment: 1. Calcified Lymph Gland Producing Symptoms of Gall Stones. 2. Old and Infected Abdominal Pregnancy with Extension of Long Bones into Bladder and into Bowel. 3. Case of Adenomyoma of Rectovaginal Septum. 4. Operation for Radical Cure of an Umbilical Hernia in Patient Weighing 464 Pounds. 5. Removal of Large Tuberculous Cyst of Mesentery of Jejunum, Together with Corresponding Segment of Bowel; Recovery; Later Death, Apparently from Tuberculous Meningitis. T. S. Cullen, Baltimore.
126 Points in Surgical Treatment of Acute Intestinal Obstruction. S. J. Mixter, Boston.
127 *Radium Treatment of Fibroid Tumors. H. A. Kelly, Baltimore.
128 *Cancer of Prostate. E. S. Judd, Rochester, Minn.
129 Wisdom of Past, Prophecy of Future. J. W. Long, Greensboro, N. C.
130 *Gall Stones During Course of 1,066 Abdominal Sections for Pelvic Disease. R. Peterson, Ann Arbor, Mich.
131 *Experiments in Production of Abortion and Labor by Use of Placental Extracts. A. H. Curtis, Chicago.
132 *End Results of Treatment of One Hundred Cases of Fracture of Elbow; Immobilization in Hyperflexion Combined with Early Passive Movements and Massage. H. Neuhof and H. F. Wolf, New York.
133 *Cure of Cancer of Uterus by Curetting for Diagnosis. H. J. Boldt, New York.
134 Ovarian Tumors in Pregnancy. W. C. Danforth, Evanston.
135 Complete Removal of Adenocarcinoma of Uterus by Exploratory Curettage. Report of Three Cases. L. J. Ladinski, New York.
136 Some Rare Fetal Teratisms—Sympodia, Craniopagus and Acephalus. W. A. N. Dorland, Chicago.
137 Scopolamin Seminarcosis. G. C. Mosaer, Kansas City, Mo.
138 Thoracotomy in Unresolved Pneumonia. R. Winslow, Baltimore.
139 Successful Treatment of Bichlorid Poisoning Case by Hydraulic Irrigation Through Cecostomy Operation. J. H. Anderson, Pittsburgh.
140 Extraperitoneal Cesarean Section. Report of Two Cases. J. S. Lawrance, Greensburg, Pa.
141 Operative Treatment of Fractures. W. R. Jackson, Mobile, Ala.
142 Electric Motor for Use in Bone Work. R. E. Farr, Minneapolis.
143 *Gall-Bladder Infections: Their Treatment from Surgical Viewpoint. L. Frank, Louisville, Ky.
144 *Results of Radium Treatment in Uterine and Rectal Cancers. Report of Twenty-Three Cases. H. Schmitz, Chicago.

124. Abstracted in THE JOURNAL, Jan. 23, 1915, p. 366.

125. **Unusual Cases; Points in Diagnosis and Treatment.**—The cases reported by Cullen are the following: 1. A calcified lymph-gland embedded in adhesions and lying against the cystic and common bile ducts, producing symptoms somewhat suggestive of gallstone. 2. An old and infected abdominal pregnancy with extension of the long bones into the bladder and into the bowel. 3. A case of adenomyoma of the rectovaginal septum. 4. Operation for the radical cure of an umbilical hernia in a patient weighing 464 pounds. With the patient standing, the dependent portion of the abdomen reached the knees. As the omentum was adherent to the hernial sac the transverse colon was markedly drawn downward. The hernial sac was divided into numerous secondary cavities. 5. Removal of a large tuberculous cyst of the mesentery of the jejunum, together with the corresponding segment of bowel; recovery; later death, apparently from tuberculous meningitis. The cyst was globular, occupied the center of the upper abdomen and was partly covered by adherent red and greatly thickened omentum. Below it was adherent to several loops of small bowel. The omentum was severed near the transverse colon and the loops of small bowel were liberated. The cyst was then gradually loosened, as far as feasible, from its attachment to the mesentery. The cyst walls varied from 2 to 3 mm. to 1 cm. or more in thickness. The inner surface presented a friable, worm-eaten appearance and the pus was odorless, rather thin, and greenish yellow in color. At the cut ends of the jejunum the mucosa was practically normal, but a section near the center of the loop showed marked thickening of the bowel wall, together with much narrowing. The glands in the mesentery were considerably enlarged. The ends of the bowel which were held by forceps were closed and a lateral anastomosis was then made. This was a rather difficult procedure on account of the shortness of the remaining portion of the jejunum.

127 and 128. Abstracted in THE JOURNAL, Jan. 23, 1915, p. 367.

130. **Gallstones in 1,066 Abdominal Sections.**—Among these 1,066 patients gallstones were found by Peterson 135 times, or in 12.66 per cent. of the cases. The high percentage of gallstones in this series, Peterson says, may be due to one or more of three factors: The relative high average age of the patients examined, the high percentage of women who had borne children; or, finally, to the large proportion of uterine and ovarian neoplasms present in the women examined for gallstones. Except when contra-indicated by the condition of the patient or the possibility of contaminating clean peritoneum, Peterson, says, the gall-bladder should always be palpated when the abdomen is opened for pelvic disease. Hence, the small abdominal incision should give way to one large enough to permit of thorough exploration of the abdominal cavity. When gallstones are removed at the time of pelvic operations, from 85 to 90 per cent. of the patients will have no subsequent symptoms referable to the gall-bladder, provided the proper technic be employed. When gallstones are not removed either because their mere presence is not though to warrant their removal or because the condition of the patient forbids further operative procedure, 30 per cent. of the patients will suffer subsequently from gallstone attacks or other symptoms referable to the gall-bladder. Therefore, Peterson concludes, since gallstones are always liable to produce symptoms and at times are a distinct menace to the patient, they should be removed when the abdomen is opened for pelvic disease, if this can be done without much additional risk to the patient.

131. **Abortion and Labor by Placental Extracts.**—Sixteen pregnant rabbits and guinea pigs were given extract of human placenta in normal salt solution by Curtis. In four instances pregnancy progressed undisturbed, evidently because the amount injected was very small. Three advanced cases littered within forty-eight hours. In nine cases, in which pregnancy was less advanced, absorption or abortion of the embryos occurred in every instance. The absence of corpora lutea in animals which came to autopsy was a noteworthy finding, as was also the presence of large corpus luteum cysts in the one guinea pig subjected to two injections of placental extract. Ten pregnant guinea pigs were injected with defibrinated blood from pregnant and puerperal women. Five progressed to term. In two cases the results were doubtful; in three there occurred absorption or abortion of the embryos. Subcutaneous injection of normal salt solution in two control animals did not disturb the development of pregnancy. Six control pregnant guinea pigs were injected with defibrinated blood from normal non-pregnant women. In every instance pregnancy was undisturbed and was followed by litter of healthy pigs. Seven pregnant guinea pigs were given extract of guinea pig placenta in normal salt solution. Pregnancy progressed (delayed?) to term with a litter of

normal offspring in five instances. One case terminated in abortion, and one in absorption of the embryos. The injection of four pregnant guinea pigs with blood from puerperal and pregnant guinea pigs was followed by litter of healthy pigs. In one instance birth may have been premature.

132. **Results of Treatment of Elbow Fracture.**—No selection of material was made by Neuhof and Wolf, the 100 cases in which the final result could be determined being taken in succession. They include simple and comminuted fractures, supracondylar fractures, and those of the humerus that enter the joint, fractures of the upper end of the radius and ulna; in short all the types of fracture at the elbow joint. Recent cases are not included. The final discharge with a perfect result was made in 53 per cent. of the cases; the remaining 47 per cent. presented results more or less imperfect. Patients finally discharged with a perfect result were referred for mobilization and massage at periods averaging 12.8 days after fracture. Patients finally discharged with an imperfect result were referred for mobilization and massage at periods averaging 32.1 days after fracture. Six patients of the series were operated on. A perfect result was not obtained in any of the cases operated on and subsequently were sent for mobilization and massage. The authors emphasize that hyperflexion does not mean merely acute flexion; it is the most acute flexion in which the elbow can be fixed without obliterating the radial pulse. Massage and mobilization are applied daily in the great majority of the cases. Although massage may be instituted immediately after the injury, an absolute rule for the time to begin mobilization cannot be made. Mobilization may be tentatively essayed as soon as the fourth or fifth day after the fracture.

133. Abstracted in THE JOURNAL, Jan. 30, 1915, p. 466.

143. Abstracted in THE JOURNAL, Nov. 21, 1914, p. 1878.

144. **Radium Treatment of Cancer.**—Schmitz reports twenty-three cases. He states that in inoperable cases the immediate results of radium treatment are good; hemorrhage, pain and profuse putrid discharges cease. This improvement is only of short duration and additional applications of radium do not bring about an improvement. The results, however, equal those of any other known treatment. Only one of twelve cases so treated has shown encouraging results. Recurrent cancers, if far advanced, are very refractory to radium treatment. The result of radiotherapy is practically nil. However, in beginning and localized recurrences, radium seems to produce pronounced beneficial results and is the most valuable therapeutic agent we possess. Schmitz points out that final conclusions regarding the use of radium in uterine and rectal cancers cannot be drawn until more time for observation has elapsed. The primary results, however, have been very promising.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Children's Diseases, London

October, XI, No. 130, pp. 433-464

1 Case of Kala-Azar. T. R. Whiphem.
2 Case of Hyperplastic Tuberculosis of Tunica Vaginalis. F. C. Pybus.
3 Four Cases of Rectal Polypus Occurring in One Family. A. F. Hertz.

November, No. 131, pp. 465-496

4 Status Lymphaticus. H. Thursfield.
5 *Vaccine Treatment of Scarlet Fever. D. MacIntyre.
6 Complete Occlusion of Trachea Due to Injury to Cricoid Cartilage After Intubation and Tracheotomy. Operation and Recovery. D. F. Riddell.

December, No. 132, pp. 497-559

7 *Early Development of Myositis Ossificans Progressiva Multiplex Illustrated by an Apparently Congenital or Almost Congenital Case. F. P. Weber and A. Compton.
8 Nervous Cretinism. R. McCarrison.

January, XII, No. 133, pp. 1-32

9 Three Cases of Tetanus Cured by Subcutaneous Injections of Antitetanic Serum. J. Comby.
10 Acute Pemphigus Complicating Scarlet Fever. J. M. Robertson-Ross.
11 *Case of Unexplained Edema and Pemphigus in Convalescence from Scarlet Fever. R. L. Wilcox.

February, No. 134, pp. 33-64

12 Case of Chronic Lymphoid Leukemia with Much Temporary Benefit from Benzol Treatment. H. D. Rolleston and J. D. Rolleston.
13 Infection of Middle Ear with Vincent's Organisms. J. Adam.
14 Perforation of Arch of Aorta by Safety Pin Impacted in Esophagus. E. G. L. Goffe.

5. **Vaccine Treatment of Scarlet Fever.**—Five cases of septic scarlet fever were treated in the acute stage by MacIntyre with autogenous streptococcic vaccine, the organisms in one case being cultivated from the nose and in the others from the throat. An initial dose of 10 million was given and this was doubled at intervals of five days until the temperature dropped to the normal level. All the patients recovered, but three developed otitis. MacIntyre states that it could not be said that the vaccine had any definite effect in any of the cases. Autogenous vaccine was also used in the treatment of nasal and ear discharges. In most cases no attempt was made to isolate all the bacteria. The cultures were made on ordinary agar and incubated for twenty-four hours. The organisms were then suspended in normal saline to which 0.5 per cent. phenol had been added, and afterward heated in a bath at 60 C. (140 F.) for an hour. An initial dose of 100 million was given and this was repeated at intervals of five days, the number of organisms being increased at each successive injection until a maximum of 1,600 million was reached. Out of twenty-eight cases of nasal discharge treated, twenty-three were cured, but five showed no improvement after eight doses. In two of the latter cases numerous diphtheroid bacilli were present in the discharge, which was slight in amount but persisted for several weeks. With regard to ear discharge, fourteen cases were treated, of which eight recovered while six remained chronic. In the unsuccessful cases the infection was very mixed, diphtheroid organisms being present in the discharge in three cases and bacilli of the coli group in two cases.

7. **Myositis Ossificans Progressiva Multiplex.**—The case cited by Weber and Compton is an example of the commencement of myositis ossificans progressiva in a baby, the first signs of the disease in the present patient having been almost, if not quite, congenital. The early diagnosis was due to the appearance of diffuse, hard, painless, transient lumps or swellings at various parts of the patient's body, similar in character to those described by A. E. Garrod. The effect of traumatism as an occasional exciting cause of the local manifestations of the disease is illustrated in the present case by the occurrence of the first "lump" (namely, the swelling on the left side of the neck) a few days after a slight fall on the left shoulder, and is still further illustrated by the development of bony lumps at the site of one of the biopsy incisions and at the site of the fibrolysin injections. The disease appeared in this case to be due to a congenital, but not inherited, tendency to the formation of fibrous tissue and bone in striped muscles (that is to say, in the connective tissue normally belonging to the muscles), especially at the site of, and as a result of, traumata (even slight traumata) of various kinds. The case also shows that the growth of the newly formed bone in myositis ossificans progressiva does not necessarily proceed from the periosteum, as it seems to do in cases of ordinary traumatic localized myositis ossificans ("rider's bone," etc.). The bony lump at the site of an incision into the vastus externus muscle of the right thigh developed quite far from any periosteum. How little an ordinary inflammation of muscle (myositis in the strict sense of the word) has to do with the disease is shown in the present case by the results of microscopic examination of the diseased muscle before any local bone formation had occurred, and likewise by the practical absence of fever or constitutional disturbance during the exacerbations. The authors believe that there is something to be said in favor of such a term as "hyperplasia fascialis ossificans progressiva." The disease appears histologically to be an ossifying hyperplasia of the fascia and connective tissue of the striped muscles, especially the muscles of the trunk. In the early stages of the disease, however, the muscular swellings constituting the exacerbations sometimes subside without the immediate occurrence of any local ossification at the site of the swellings.

11. **Edema and Pemphigus from Scarlet Fever.**—The interesting features in Wilcox's case are that the pemphigus occurred in convalescence from scarlet fever, that it was preceded by an unexplained edema, and that otherwise the attack of scarlet fever was free from any complications.

Practitioner, London

February, XCIV, No. 2, pp. 179-342

15 Theory of Internal Secretions. C. E. de M. Sajous.
16 Thyroid Insufficiency. L. Levi.
17 The Pancreas. C. von Noorden.
18 Internal Secretions of Alimentary Canal. W. L. Brown.
19 Use of Hormones in Medicine. G. R. Murray.
20 Use of Hormones in Gynecologic and Obstetric Disorders. W. B. Bell.
21 Use of Hormones in Children's Diseases. H. E. Waller.
22 Hormones in Relation to Diseases of Skin. J. M. H. MacLeod.
23 Internal Secretions and Psychoses. T. B. Hyslop.
24 Thyroid Insufficiency in General Practice. J. P. Granger.

Bulletin de l'Académie de Médecine, Paris

February 9, LXXIII, No. 6, pp. 169-211

25 *Results of Direct Electrization of Nerve Trunks. (Electrisation directe des troncs nerveux dans la plaie opératoire chez les blessés atteints de traumatismes des nerfs.) P. Marie.
26 Treatment of Freezing Injuries. (Sur les gelures.) E. Delorme.
27 Discussion of Treatment of Wounds of the Nerves. (Blessures des nerfs par projectiles.) S. Pozzi and Others.
28 *Embolism of Central Artery of the Retina. Teillais.
29 *Tubercle Bacilli in the Blood of Young Infants. (La bacillémie tuberculeuse primitive du premier age.) A. Jousset.
30 *Autohemotherapy in Treatment of Typhoid Fever. F. Ramond and G. Goubert.
31 *Psychopathic Polyuria. A. Mathieu.

25. **Direct Electrization of Nerve Trunks Injured in War.**—Marie gives an illustrated description of an electrode, for exploratory tests of nerve functioning, which has the advantage over others that it can be sterilized. With this it is possible to estimate the amount of damage done to the nerve and the correct treatment to be applied. It also permits the identification of the nerve fibers involved in the trauma. Different tracts of fibers in the nerve trunk innervate different groups of muscles, and in suturing the nerve it is indispensable that the continuity of these tracts be restored. Failure to realize this means that, although the trunk nerve has been sutured, yet functioning is impossible because the wrong bunches of fibers have been coaptated, and continuous transmission of the special nerve impulse is impossible. The electrode is made of two glass tubes, fastened side by side, through which the wires are brought, bent zigzag to hold their place in the tubes. A smaller glass tube, tapering to a point, fits into the end of each tube, and the nickel or platinum wire electrode emerges from the tip of the outer smaller tube. The wires connecting with the battery are strung close with glass beads to facilitate handling. The electrode tips of the two wires are curved toward each other so that the space between is short.

28. **Embolism of the Central Artery of the Retina.**—Teillais says that in his forty cases of this kind seven of the patients were pregnant women. The pregnancy had passed the sixth month in each case. The changes in the composition of the blood due to gestation and the tendency to stagnation in the venous circulation readily explain why previously healthy women are liable to this serious eye trouble.

29. **Tubercle Bacilli in Infants' Blood.**—Jousset recalls that when a guinea pig is inoculated with tubercle bacilli, bacillemia results before any lesions have had time or chance to develop, and suggests that a similar bacillemia probably occurs in infants when tuberculous infection is first installed. He has examined the blood of a large number of infants under 3 months of age and has been amazed at the number of cases with positive findings in the blood when nothing else suggested tuberculosis. The tubercle bacillus does not live a saprophytic existence, and consequently its presence in the fresh cadaver blood indicates an actual pretuberculosis bacillemia. The infants present the ordinary picture of gastro-intestinal disturbances and athrepsia (infantile atrophy). A regular decline in weight and persisting diarrhea, which nothing seems to explain, are the usual findings with this bacillary toxi-infection. The tuberculin tests are almost always negative in the cases in question. He cites as typical illustrations six infants from 5 to 10 weeks old and two from 6 to 7 months old. All had been regarded as examples of typical athrepsia, but all showed tubercle bacilli in the blood with no other signs of tuberculosis.

30. **Autohemotherapy in Typhoid.**—Ramond and Goubert published four years ago their favorable experiences with subcutaneous injection of the patient's own blood in treatment of various infectious diseases. The blood is drawn from a vein and at once reinjected into the cellular tissue close to the vein, thus giving the blood no chance to cool or coagulate. They reported benefit from the procedure, and their experience with it in fifty recent cases of typhoid fever has corroborated their previous announcements. The temperature goes up a trifle at first but then falls below what it had been and the general condition materially improves. The results were very good in 38 per cent. of the cases; moderate in 18, and negative in 44 per cent. The procedure is repeated every day if benefit is noted, in connection with ordinary measures.

31. **Polyuria.**—Mathieu remarks that in every case of polyuria the physician starts out with the idea that the polyuria must first prove that it is not connected with diabetes mellitus. This, he thinks, is wrong. The first step should be to exclude polyuria from excessive drinking, possibly merely a habit of drinking too much fluids, which is easily broken up. Or the habit may be of hysteric origin, a hysteric potomania, which may be arrested by suggestion. In other cases the potomania may be one manifestation of a severe inherited nervous taint, and in such degenerates it is usually refractory to both suggestion and education. If these psychopathic polyurias are excluded before further study of the polyuria in a given case, much time and trouble will be saved.

Berliner klinische Wochenschrift, Berlin

February 15, LII, No. 7, pp. 145-172

32 Epidemics in War. (Entstehung und Ausbreitung der Kriegsseuchen.) F. Hueppe. Concluded in No. 8.
33 *Practical Suggestions for Treatment of Tetanus. B. Heile.
34 Callus Production After Injury of Bones. D. v. Hansemann.
35 To Locate Metal Foreign Bodies in the Tissues. (Der Kugelsucher.) H. Schmidt.
36 Intracutaneous Injection and Anaphylaxis. G. Blumenthal.
37 No Effect on Urate Deposits from Thorium X. (Thorium X und Harnsäure.) E. Kuznitzky.

33. **Treatment of Tetanus.**—Heile calls attention to a fulminating case of tetanus which developed the twenty-first day after the shell wound. The man was recovering from his injury when a correcting operation was undertaken, opening up a fistula, and the tetanus developed four days thereafter. The germs must have been already in the wound but quiescent until roused by the later operation. Another point which Heile emphasizes is the behavior of the reflexes in tetanus; the reflexes in the part involved become exaggerated as the toxic action of the tetanus germs is felt more intensely. When he finds the knee jerk in a wounded limb exaggerated and growing constantly more pronounced, he accepts this as a sign that tetanus is already installed although there may be no other sign or symptoms of it. He administers magnesium sulphate at once, in amounts sufficient to reduce the reflexes to normal.

Correspondenz-Blatt für Schweizer Aerzte, Basel

February 13, XLV, No. 7, pp. 193-224

38 Typhoid Among the Swiss Troops Guarding the Border. (Einige Typhusfälle aus dem Militärdienst.) R. Staehelin.
39 The Mercury Vapor Lamp to Sterilize Water for Surgical Purposes. (Die Quecksilberquarzlampe im Dienste der Kriegschirurgie.) O. Stiner.

Deutsche medizinische Wochenschrift, Berlin

February 11, XLI, No. 7, pp. 181-212

40 *Caramel in Antidiabetic Diet. F. Umber.
41 Acute Fatal Poisoning from Benzol Fumes. A. Heffter.
42 *Tubercle Bacilli in the Blood. E. Rumpf and J. Zeissler.
43 *Experiences with Wounds of the Lungs. (Lungenschüsse.) F. Unterberger.
44 *Gas Bacillus Sepsis. C. Bingold.
45 Physical Examination of Volunteer Recruits. (Erfahrungen bei der Untersuchung von Kriegsfreiwilligen.) S. Kaminer and A. da S. Mello.
46 To Lift the Severely Wounded. (Handgriff zum Heben Schwerkranker und Verwundeter.) Heddaeus.

47 *Simple Test for Iodin in Body Fluids. (Der einfachste und schnellste Nachweis von Jod im Urin, Speichel und in anderen Körperflüssigkeiten.) J. Schumacher.
48 Prevention of Crippling. O. Vulpius.

40. **Caramel in Antidiabetic Diet.**—Umber's experience is confirming Grafe's statements in regard to the availability of caramel for diabetics. They seem to be able to digest and assimilate properly this product of the thorough polymerization of sugar by heat. The caramel of the kitchen is only partially polymerized. Umber gave it to patients with mild or moderate diabetes, in the form of dessert or strewed on an omelet, and there was no increase in the sugar content of the urine. In the severer cases, however, the glycosuria increased in a few instances, so the tolerance should be tested before feeding the caramel in the more serious cases.

42. **Tubercle Bacilli in the Blood.**—Rumpf and Zeissler compare their experimental and clinical findings with those of others, their conclusions being that the bodies found so frequently in the sediment of human blood are by no means all tubercle bacilli, no matter how close the resemblance.

43. **Wounds of the Lungs.**—Absolute rest is the main thing in treatment, Unterberger emphasizes. The patient should be left in peace; moist heat may give relief, and a sedative may stop the cough for the first few days. After the danger of hemorrhage is past, an expectorant is given, with heart tonics as needed. In fifty-six of his sixty-five cases the lung had been the only organ wounded, and notwithstanding the severity of the disturbances at first, nearly all that reached his hospital (Königsberg) promptly recovered and a number have returned to the front.

44. **Gas-Bacillus Sepsis.**—The extreme yellowish-brown discoloration of all the skin and the suffocation were the main features of the sepsis which proved fatal within two days of the shrapnel injury from which it started. The discoloration was evidently from destruction of the blood corpuscles, and the lack of oxygen-bearing corpuscles was responsible for the prolonged dyspnea.

47. **Test for Iodin in Body Fluids.**—Rubbing the fluid into a little calomel is regarded as the simplest test for iodin but even this takes time. Schumacher suggests the use of blotting paper impregnated with a 2 per cent. solution of selenous acid. The paper turns blue if there is any iodin in a drop of fluid deposited on it. The test can thus be applied to urine from twenty different persons and the response noted, all in one minute. He warns that the reagent paper does not keep well over long periods, and describes still another technic free from this drawback.

Jahrbuch für Kinderheilkunde, Berlin

February, XXXI, No. 2, pp. 97-182

49 Pathologic Anatomy of Tuberculosis in Children. (Kindertuberkulose.) A. Ghon and B. Roman.
50 *Serotherapy of Scarlet Fever. (1335 Scharlachfälle, die mit dem Moserschen Serum behandelt wurden.) L. Axenow.
51 *Disease of the Nasal Sinuses in Infants. (Die Nasennebenhöhlenerkrankungen in den ersten Lebensjahren.) A. Onodi.
52 *Automatic Movements During Sleep; Three Cases. (Seltene Formen kindlicher Schlafstörung.) F. Hamburger.
53 Ehrlich's Differential Reaction in the Urine in Acute Infectious Diseases. (Paradimethylamidobenzaldehydreaktion von Ehrlich im Harn bei scharlach-, masern- und diphtheriekranken Kindern, sowie bei verschiedenen Mischinfektionen.) E. Rachmilewitsch.

50. **Serotherapy in Scarlet Fever.**—This communication from Petrograd extols serotherapy in the severer cases as the only means known to date which is able in some cases to ward off the fatal outcome. It must not be given later than the third or fourth day, and the dose must not be fractioned. It should be reserved for the severer cases and for children more than a year old. Kidney complications are extremely rare in those given serum treatment, but the course of the disease does not seem to be shortened. The best results were realized always when streptococci were found in the blood. The serotherapy was applied in 1,335 of the 21,000 cases of scarlet fever in the last nine years.

51. **Disease of the Nasal Sinuses in Young Children.**—Onodi has compiled from the records 53 cases of this kind; in 23 it seemed to be a complication of scarlet fever; in 8 cases the antrum was diseased at birth; 2 infants were 26 days old when the sinusitis was discovered in the antrum of Highmore; another case was in an infant 18 days old with ethmoidal sinusitis. Radical operative treatment is as necessary for infants as for adults; it cured the children completely in 37 of the 53 cases, including 5 cases in which the frontal, ethmoidal, maxillary and sphenoidal sinuses were all involved. Seven of the children died, including 3 scarlet fever patients. Schlemmer cured an 18-day-old infant by opening up the ethmoidal cells, and Canestro by opening up the maxillary sinus. Killian operated on the frontal sinus and the 15-months' babe died. In the 16 operative cases of which the details are known, there were 7 scarlet-fever cases, and the operation was a success in all but one case in which the child died.

52. **Habit Movements During Sleep.**—The children were two boys of 4 and 7 and a girl of 12. The latter lay prone during sleep, with her hands crossed under her face, and for hours at a time she pounded her brow against her hands with a regular rhythm. One boy lay prone and kept pounding his head against the pillow. The younger boy rose on his knees and arms and made regular movements with his body, keeping this up hours at a time. All were cured after months or years of these habits by a week or so in the hospital in which they were kept at first under the influence of sedatives.

Medizinische Klinik, Berlin

February 14, XI, No. 7, pp. 179-206

54 *Joint and Other Bone Wounds in War. (Zur Behandlung und Beurteilung infizierter Gelenk- und Knochenschüsse.) H. v. Haberer.
55 Wounds of the Lungs. (Lungenschüsse.) H. Gerhartz.
56 Epidemic Meningitis Simulating Typhus. (Flecktyphusartiger Verlauf von Genickstarre.) F. Umber.
57 *Intensive Artificial Light Treatment of Wounds in War. E. Breiger.
58 *Pyelitis of Pregnancy. (Die Nierenbeckenentzündung der Schwangeren.) R. Franz.
59 *Enlargement of Lymph Glands at the Elbow with Chronic Polyarthritis. V. Ellermann.
60 *Cancer Family. (Zur familiären Häufung des Carcinoms.) H. Peiser.

54. **Wounds of Joints.**—Von Haberer comments on the remarkable freedom from infection of so many of the wounds of joints. Those which heal without infection far outnumber the infected cases. When a splint had not been applied, to keep the joint immovable, the bandage usually worked off during the trip to the base hospital and infection was inevitable; any kind of a splint prevented this. His experience at Innsbruck has confirmed the folly and danger of draining a joint wound from the first. Fixation and leaving the joint alone are the best treatment at first, and even when there are pains, and the joint and lymph glands swell and the temperature runs up to 40 C. (104 F.) with small rapid pulse and dry tongue, a few hours' rest in bed with the limb in the best position will often do wonders for the soldiers exhausted from their long railroad journey. Gas phlegmons, of course, call for immediate action, but otherwise operative treatment is not required unless the fever, pains and swelling keep up. Then he punctures the joint at several points and, wherever pus or a purulent effusion is encountered, he makes a small incision and introduces a retention rubber drain, rinsing out with a 1 or 4 per cent. solution of formaldehyd if the secretions are thick. The functional outcome is much better with multiple small incisions than when the joint is opened up extensively, and the lesion heals fully as well.

The dressings require changing only when they are too soaked to absorb further; moist dressings impede free discharge. He refrains from disturbing the shattered bones in the depths of the wound, but applies extension or passive movements as indicated. In his fifty cases of severe suppurating injury of large joints, amputation was done in only one instance. When there is general sepsis, amputation is of no avail. In several such cases necropsy showed that the joint lesion was healing well; treatment should be directed against the septicemia and the man should not be weakened further by a futile amputation. Youth and good constitution often bring the man through even in these severe cases. He gives an illustrated description of several cases treated on

these principles with complete success. Extension in semi-flexion with the limb suspended can be easily improvised. Secondary gravity abscesses must be watched for.

57. **Phototherapy for Wounds in War.**—Breiger comments on the revolution in opinion in regard to the therapeutic action of sunlight, the mercury-vapor light and others, since Finsen and Rollier's day, and pleads for their extensive use in treatment of wounds in war. In sixty-five cases in which he has applied phototherapy in its various forms the lesions healed unusually fast and the scar tissue was strong; suppuration was checked early and necrotic tissues were cast off promptly while blood and serous infiltrations in the region were absorbed more rapidly than under other conditions. The mercury-vapor light is called in Germany the "artificial mountain sunlight" as it has about as many ultraviolet rays as the sunlight at moderately high altitudes. He applies different forms of phototherapy, reserving the ultraviolet rays for the more torpid lesions. Old rebellious furunculosis and severe acne were promptly cured by the mercury-vapor light after failure of all other measures perseveringly applied.

58. **Pyelitis of Pregnancy.**—Franz declares that the current assumption that the pyelitis of pregnancy does not require special treatment is wrong and misleading. In the milder cases the symptoms may subside without active measures, but whether or not the lesion has healed is another question, and time often proves that it has not. Severe pyelitis, on the other hand, is always a danger for both mother and child. Opitz found that in 40 per cent. of such cases there was premature delivery. The focus in the kidney pelvis is liable to breed puerperal fever or spread to involve the kidney proper, with or without pyonephrosis and concrements. Treatment should be conservative at first, including copious drinking and the administration of salol or methylene blue if the urine is acid, and of hexamethylenamin, boric acid, etc., with alkaline urine, supplemented by local disinfection of the bladder and lying on the sound side to promote the emptying of the kidney pelvis. If the clinical manifestations do not subside promptly under this, then a retention catheter should be introduced into the ureter and the kidney pelvis rinsed out with a silver salt solution; as a last resort, interruption of the pregnancy or a nephrotomy. The pyelitis must not be regarded as cured until bacteria and pus can no longer be found in the urine; direct disinfection of the kidney pelvis through the ureter catheter generally accomplishes this.

59. **Enlarged Glands with Chronic Polyarthritis.**—Ellermann found enlarged lymph glands at the elbow in 50 per cent. of the 28 adult patients with typical chronic polyarthritis. In nearly all, one or more other groups of glands were enlarged and in a number the joint trouble had begun with an acute onset, the spleen enlarging also. The heart seemed to be sound in all his cases.

60. **Cancer Family.**—Peiser removed a small lump from the breast of a man of 33. The microscope showed nothing malignant, but it was learned that cancer of the breast was prevalent in the man's family, all commencing in this way. It was found in the women in three generations before him, and three of his four uncles and aunts had died of cancer of the breast, stomach or tongue, and the fourth of tuberculosis; his one cousin had cancer of the breast at 38.

Monatsschrift für Geburtshülfe und Gynäkologie, Berlin

January, XLI, No. 1, pp. 1-108

61 *Active Substance Isolated from Ovary and Placenta. (Wirksame Substanz im Eierstocke und in der Placenta.) E. Herrmann.
62 Cholelithiasis and Pregnancy. J. A. Amann.
63 *Retention of Placenta and Puerperal Fever. G. Winter.
64 *Plastic Operation on the Mouth of the Fallopian Tubes to Restore Permeability. (Klinische Erfahrungen über Salpingo-Stomatoplastik.) E. Löhnberg.

61. **Active Substance Isolated from the Ovaries and Placenta.**—Herrmann reviews the work of other authors in preparing extracts from the ovaries and placenta, and then describes in detail his method of obtaining in pure form an active principle from these organs that seems to be a chemical entity. He separated the corpus luteum from the rest of the ovary, so that it is purely a corpus luteum substance. The substances from the corpus luteum and the placenta are identical, but a placenta contains a greater amount. It is a thick yellow oil that turns brown in the air from oxidation. It is a derivative of cholesterin, and is soluble in alcohol, ether, aceton and benzol, but not in water.

The animal experiments in which he tested the action of the substance are described. During the course of the preparation the substance had various injurious effects on the animals, but, when obtained pure, it had no bad effect. Its effect in stimulating the growth and development of the sexual organs was very powerful. Young animals 8 weeks old, after five days' injections showed the sexual development of animals from 25 to 30 weeks old. When the injections were continued, changes similar to those of the rutting period or early pregnancy took place. The mammary glands of both male and female animals were markedly developed. The substance also contributes to the development of secondary sexual characters. Its action in this line proves, he says, that the development of the mammary gland is dependent on the secretion of the corpus luteum and placenta. Eight colored plates are given showing the macroscopic changes in the genital organs after injections, and fifteen figures in the text show the microscopic changes. There is a bibliography of about sixty titles.

63. **Retention of Remnants of Placenta and Puerperal Fever.**—Winter holds, in contrast to the usually accepted opinion, that puerperal fever is not caused by retention of remnants of placenta; it only happens that they coexist in many cases. He admits that auto-infection from bacteria in the vagina is both possible and frequent, but he is convinced that the bacteria in the uterus are derived from without, infecting the wall, and that this occurs whether or not there is retained placenta. In support of this idea he cites statistics from his own clinic: Among 149 cases of retention of placenta the puerperium was afebrile in 66, or 44 per cent.; it was slightly febrile in 75, 50 per cent.; and there were 8 severe cases of fever, with one death. But in 4 of these severe cases there had been an operation that might have been responsible for the infection.

In order to demonstrate from the necropsy findings that the infection was caused by the retained placenta, it would be necessary to show that the entire thickness of the placenta was infested with bacteria, down to the maternal vessels. In all the cases examined by Winter he found bacteria only in the peripheral part of the placenta. The reason he thinks it so important to decide this question is that the old conception of it makes it imperative to empty the uterus of the retained remnants at once; in so doing an opportunity is created for further infection.

64. **Plastic Operation on the Tubes.**—In 1885 Martin resected a piece of the tube, turned back the mucous membrane and sutured the mucous and serous coats together so as to form a new ostium. He performed this operation in sixty-five cases, and among forty-seven that he was able to examine later, only two had conceived after the operation. This technic has not been very extensively used since then. Gellhorn stated in 1911 (THE JOURNAL, June 24, 1911, p. 1912) that up to that time thirteen successful cases of salpingostomy had been reported in international literature. Löhnberg reviews briefly the cases reported since then, and discusses twenty-one cases in which he performed this salpingostomatoplastic operation at his own clinic between 1908 and 1913. He thinks the operation justified in chronic inflammatory conditions of the tube in which the walls are not very much damaged; also in moderate degrees of hydrosalpinx if we are sure that there is no recent inflammatory process; also in perisalpingitic processes that have caused adhesion and occlusion of the tube.

Of course, it is useless to perform the operation unless the whole length of the tube is permeable, which should be determined beforehand by the introduction of a sound. It is absolutely contra-indicated in pyosalpinx, and should be performed only in comparatively young women who have had few children or none at all and who desire to remain capable of conception. The average age in Löhnberg's cases

was 26 years; none of these patients was over 30. Recovery after the operation was uneventful. In two of the cases he was obliged to perform another laparotomy later—for retroflexion, however; not for any condition produced by the salpingostomy. The new-formed mouth was found grown up again. In the fourteen cases that he was able to examine later, pregnancy had not occurred once. Pregnancy does not often follow the operation, but he thinks the psychic effect on the woman who desires children of the possibility of renewed conception is worth enough to compensate for the slightly increased danger of extra-uterine pregnancy. He thinks this danger does exist, but chiefly in cases in which there were previously such changes in the tubes as to favor the occurrence of extra-uterine pregnancy.

Münchener medizinische Wochenschrift, Munich

February 9, LXII, No. 6, pp. 177-216

65 *Salvarsan-Natrium. W. Wechselmann and G. L. Dreyfus.
66 *Dysentery among the Troops. (Die Dysenterieerkrankungen der Kriegsverwundeten.) T. Rumpel. (Erfahrungen aus der letzten Dysenterieepidemie.) G. Singer.
67 Excessive Hairy Growth and Precocious Puberty in Girl of 3. (Hirsutismus.) W. Herzog. Concluded in No. 7.
68 Medicolegal Decisions Affecting Physicians. (Der Arzt in der Rechtsprechung. VIII.) P. Kaestner.
69 Clinical Importance of Arrhythmia. (Herzarrhythmie.) K. F. Wenckebach.
70 *Treatment of Nerves Wounded in War. (Behandlung verletzter Nerven im Kriege.) A. Stoffel, A. Hoepfl and L. Drüner.
71 Treatment of Radial Paralysis. (Hebeapparat für Hand und Finger bei Radialislähmung.) H. Spitzy.
72 Wounds of the Intestines. (Schussverletzungen des Darmes.) Röper.
73 Wounds from Grenade Fragments. (Verletzungen durch Granatsplitter.) H. T. Kölliker and L. Basl.
74 Experimental Research on Magnesium Sulphate in Tetanus. (Wesen und Aussicht der Tetanustherapie mit Magnesiumsulfat.) G. Mansfeld.
75 Action of Different Kinds of Bullets on the Tissues. (Wirkung der regelrechten Infanteriegeschosse und die der Dumdumgeschosse auf den menschlichen Körper.) G. Perthes.
76 Treatment of Long Bones Fractured in War. (Schussfrakturen langer Röhrenknochen.) H. Els. Commenced in No. 5.

65. **Salvarsan-Natrium.**—Reports are here given of the use of this new preparation of salvarsan as applied at Berlin and Frankfurt. It is said to have the same action as the original salvarsan, while it is readily soluble and does not require any preliminary alkaline admixture. In short, it is claimed that it combines the more intensive action of salvarsan with the simple technic of neosalvarsan. Dreyfus made the injections mostly on outpatients.

66. **Dysentery and Typhoid.**—Rumpel states that the blood and stools of soldiers with intestinal trouble have shown that the Flexner bacillus is widespread in northern France, while it is rare in Flanders and Russia. Typhoid and paratyphoid carriers were found in 4.62 per cent. of 130 soldiers free from intestinal trouble. He urges that such carriers should be kept out of the army, as also all with Shiga-Kruse bacilli, but the Flexner carriers are too numerous to detain, as the Flexner type is not very serious. The bacilli had all disappeared within a period up to sixty days in his experience, but in the Hagenau epidemic 139 healthy carriers were found along with the 232 sick, and thirteen of the carriers were known to harbor the bacilli from 137 to 404 days. He remarks that the proportion of healthy typhoid and paratyphoid carriers found anywhere seems to depend on the number of bacteriologists available for the research. "Seek and ye shall find" seems to be the rule everywhere.

Singer expatiates on the importance of direct visual inspection of the rectum as the only reliable means for prompt differentiation of dysentery. In his experience with 600 cases the bacteriologic findings were often misleading. Only in less than 20 per cent. could typical findings be obtained. Rectoscopy is also important for the prognosis in many cases; even when the cure seemed to be complete and the patient had returned to normal food, the rectoscope was liable to reveal ulcers in the lower bowel, angry or torpid. He insists now on rectoscopy in every case before the patient is discharged as recovered. Obstinate constipation frequently developed during convalescence, sometimes accompanied with bradycardia and higher temperature. It yielded to antispasm measures alone. Among the complications noticed were severe pains in various muscles or joints, neuralgia and conjunctivitis. Serotherapy was tried in thirty cases and the general condition seemed much improved by it, but no influence was apparent on the local process. In twenty-five cases normal horse serum was injected and it seemed to have equally good effect. In a number of cases intravenous injection of a hypertonic salt solution gave relief and the patients recovered. It seemed to bind the toxins in the blood or anchor the complement.

70. **Treatment of Nerves Injured in War.**—Stoffel's operative work on nerves has been repeatedly mentioned in these columns. An illustration in THE JOURNAL, Oct. 11, 1913, p. 1415, shows the importance in every operation on a nerve of considering the various sensory and motor tracts of fibers in each nerve. This knowledge is especially needed in operating on nerves injured by a bullet or fragment of a shell. He warns not to separate the nerve from its bed until the last minute, as the stumps must be guarded against twisting. This would prevent the coaptation of the fiber tracts; motor tracts might be sutured to sensory tracts, which would retard restoration of function. The stretching of the stumps to bring them into contact should be done before the ends are freshened. It is usually necessary to pass the needle through some of the nerve tissue itself to obtain a stout hold. When this is the case, the sensory tracts should be selected, carefully avoiding touching the motor tracts. He advises expelling the blood as an aid to operating on a nerve, and after it is sutured he encloses it in a sheath. For this he generally uses a calf's artery or vein, stuffed with cotton and hardened in formaldehyd. A cuff is cut from this long enough to extend each side 1 or 2 cm. beyond the suture. It is slit lengthwise and wrapped around the sutured portion and tied with catgut. Then a muscle or fat flap is sutured to cover the sheath and the skin is then sutured. In all cases of injury of a nerve, the parts must be kept thereafter in an attitude that brings the stumps closest together. This prevents much retraction, which is a serious obstacle to attempts to restore the continuity of the nerve. If the limb is kept for three or four weeks in a position that prevents the gaping of the injured nerve, it will have grown together and to adjacent tissues so that further contention is not necessary. He regards this preliminary treatment as of vital importance for the operation later. If the nerve happens to be taut at the time it is wounded, the injury is more serious, as a relaxed nerve may give way before the bullet and thus escape damage.

Therapeutische Monatshefte, Berlin

February, XXIX, No. 2, pp. 65-128

77 *Present Status of Electrotherapy. (Ergebnisse der Elektrotherapie 1913-1914). J. Kowarschik.
78 Radiotherapy in Gynecology. (Gynäkologische Strahlentherapie.) T. Heynemann.
79 To Ward Off Vermin. (Zur Prophylaxe und Vertreibung des Ungeziefers im Felde.) K. Herxheimer and E. Nathan.
80 Influence on the Circulation of Suction and Other Mechanical Means to Act on the Abdomen. (Wirkung der mechanischen Beeinflussung des Abdomens auf die Zirkulation.) F. Kirchberg and C. Wehmer.
81 Mercury, Arsenic and Iron Compound for Treatment of Syphilis. (Chemotherapie der Syphilis mittels anorganischer Kombination von Quecksilber, Arsen und Jod.) P. v. Szily and H. Friedenthal.

77. **Present Status of Electrotherapy.**—Kowarschik declares that we are entering on a new era in the field of electrotherapy, as the mechanical technic has been so perfected, while our knowledge of the biologic and therapeutic action of electricity has been deepened in recent years. The theory of electrons and ions has provided a scientific basis for therapeutic action, a basis more solidly planted, he insists, than we have for the action of most of our drugs. He adds that if physicians dispute this statement it is only because they lack accurate knowledge of the theoretic-physical foundations for present-day electrotherapy. As recent progress, he mentions the improvement of the technic for faradization by the Bergonié method and of the technic for the high-

frequency current by the diathermy method. He gives a critical review of seventy articles on the continuous, the alternating and the high-frequency current that have appeared in the last two years.

Among the favorable accounts of ion treatment published recently is that of Aufaure with acute and subacute articular rheumatism treated by driving a 10 per cent. solution of sodium salicylate directly into the joints with the electric current. He found the effect superior to that with internal administration of the drug; the sittings had to be at least an hour in length. Friel has reported excellent results in treatment of chronic nose and ear disease and sinusitis. He uses for otitis media, for example, a 1 per cent. solution of zinc sulphate, with a current of 2 or 3 milliamperes, at a ten-minute sitting, repeated at eight or ten-day intervals. Sometimes a single sitting completed the cure. About half the cases of sinusitis thus treated were cured and a large proportion of the middle-ear cases. A number of recent writers have expatiated on the remarkable disinfecting action of zinc ions in treatment of local streptococcus and staphylococcus skin affections, such as furuncles or lymphangitis. A 2 per cent. solution of zinc sulphate was used as a rule; the effect was more striking the earlier it was applied. The sittings were thirty minutes long and repeated three times a week with a just bearable current. Iontophoresis applied to rabbits after subcutaneous inoculation with staphylococci prevented the development of an infectious process; this occurred also when the ions were applied before the microbes were injected into the region.

The effect of the electric current on abnormally high numbers of leukocytes was mentioned in these columns Nov. 15, 1913, p. 1853, when Veraguth's communication on the subject was summarized. He found that the whites dropped from 99,000 to 62,000 in one case of leukemia when a galvanic 5-milliampere current had been applied for fifteen minutes, the large electrodes placed on the abdomen, back or thighs. Benefit from mild application of the high-frequency current in treatment of pyorrhea alveolaris was reported by Arnal in 1913. Zeynek and Bergonié have improved the technic for diathermy and formulated the indications, and the field for its application seems to be constantly widening. Unna has reported excellent results from it in leprosy and Santos in acute gonorrhea, but with the latter the danger of burning the urethral tissues is too imminent for the treatment to come into general use. Eye and ear affections seem to offer a specially favorable field for diathermy, as also malignant growths of all kinds, Kowarschik remarks in conclusion.

Wiener klinische Wochenschrift, Vienna

February 11, XXVIII, No. 6, pp. 141-168

82 *Infected Wounds of Arteries. (Infizierte Gefässschüsse.) H. Heyrovsky.
83 *Indirect Effects of Shell Explosions. (Erkrankungen nach Granatexplosionen.) I. P. Karplus.
84 *Hyperthyroidism from the Standpoint of Military Medicine. (Kriegsmedizin.) M. Kahane.
85 To Ward Off Lice. (Zur Prophylaxe der Pediculosis.) S. Weidenfeld and E. Pulay.
86 Treatment of Wounds in War. A. von Eiselsberg.

82. **Infected Wounds of Vessels.**—This report from Hochenegg's surgical clinic at Vienna states that a large artery had been injured in thirty of the 1,710 wounded soldiers there treated. There was tardy secondary hemorrhage in twenty-one cases, and three of the men died. The fatal outcome in each was due to ascending thrombosis above the ligature thrown around the injured artery. The ligature had been applied too close to the point of injury, in the effort to spare an important branch above. The consequence was profuse hemorrhage in one case and the fatal thrombosis in three others. The men might have been saved if the ligature had been applied higher, where the tissue was absolutely sound. In the nine non-infected cases recovery was prompt and complete, but amputation became necessary in six of the infected cases.

83. **Injury from Shell Explosions.**—Karplus comments as a neurologist on the favorable prognosis of the psychogenic disturbances liable to follow explosion of a shell close at hand. During the first few days there is evidently some physical shock, but under rest and psychic measures, especially the positive assurance of a speedy cure, the man rapidly recovers. The nature of the injury seemed to influence the symptoms less than the preceding state of the nervous system. In the few cases in which the disturbances persisted, unmodified by neurologic treatment, it was learned that the men had been under treatment for some nervous affection before the war. In one case exophthalmic goiter developed after the explosion; in a few others, diabetes.

84. **Hyperfunctioning of the Thyroid Among the Wounded.**—Kahane remarks that the war has demonstrated to the world in compelling fashion the absolute indispensability of the services of the physician—a matter which in times of peace is too often disregarded by the authorities. It is imperative on medical men now, he declares, to apply in the care of the sick and wounded in the war the results of medical progress in recent years. Chief among these he ranks the knowledge we have acquired in regard to the thyroid as a factor in various morbid conditions. Far too often conditions for which excessive functioning of the thyroid is responsible are mistakenly labeled hysteria, neurasthenia, neuroses or anemia, and treated futilely on this assumption. He protests against classing all disturbances from hyperthyroidism as "complete" or "incomplete types" of exophthalmic goiter. True Basedow's disease is comparatively rare, and it affects the female sex predominantly. Hyperthyroidism, on the other hand, is a very frequent condition, affecting both sexes impartially, especially young and middle-aged adults, and it has a direct interest for military medicine which cannot be said of true exophthalmic goiter. The manifold manifestations of hyperthyroidism become more distinct and understandable when we disabuse our minds completely of the abstract notion of Basedow's disease. The same reasoning applies also to the other extreme, myxedema. It is possible for the thyroid to functionate to excess and then defectively in succession.

A number of the symptoms which result from abnormal thyroid functioning are usually ascribed to other causes. Few think of examining the thyroid when a patient complains of accelerated heart action after comparatively slight exertion subsiding to normal in repose, loss of weight, tremor, sensations of heat, tendency to sweat and to diarrhea, restlessness and irritability. Any one of the above should suggest possible thyroid mischief. The mere aspect of the eyes, a kind of rigidity and brilliancy, attracts the attention of an expert to the thyroid at once. With any of the above symptoms, examination of the thyroid should be a routine procedure. The action of the thyroid on the vascular system occurs through the mediation of the vasomotor nerves; it is evident not only in the tachycardia and increased pulse after slight exertion but also in the inability to stand caffein and similar substances. The question whether the vicissitudes of a campaign are able to elicit hyperthyroidism is still undecided, but there can be no doubt that they can fan into a flame a hitherto latent predisposition. This assumption is sustained by the fact that the features of a campaign are the exact opposite of the measures advocated in treatment of exophthalmic goiter, including the physical exertion, the excitement, and the free use of tea, coffee and meat. Kahane regards hyperthyroidism as liable to incapacitate for military service, and he expatiates on the importance of an early diagnosis, as under appropriate treatment conditions soon right themselves. He bases the diagnosis mainly on what he calls galvanopalpation: The negative electrode is fastened to some remote part of the body, and with the needle-tipped positive electrode the region of the thyroid is lightly and repeatedly touched. When the thyroid is functioning to excess, the touch of the electrode is felt intensely and the region turns very red, the color persisting a long time. With positive findings, physical and mental repose is required; the diet should be restricted to milk and vegetables, and the thyroid and nerve trunks in the vicinity should be given galvanic electric treatment, and phosphates should be taken internally.

Zeitschrift für Kinderheilkunde, Berlin

December, XII, Nos. 2-3, pp. 75-226

87 *Splenomegaly in Children. E. Nobel and B. Steinebach.
88 Multiple Patches of Necrosis in the Skin After Measles. (Multiple Hautinfarkte nach Masern.) K. Morgenstern and G. B. Gruber.
89 *Experimental Study of Alimentary Fever. E. Lövegren.
90 Giant Growth in Length of Fingers and Toes; Two Cases. (Ueber 2 Fälle von Arachnodaktylie.) F. Börger.
91 Psychiatric Analysis of Six Feeble-Minded Children. (Analysen einiger Schwachsinnfälle.) P. Belem and E. Lazar.

87. Splenomegaly in Children.—Nobel and Steinebach describe a case of successful splenectomy for cirrhosis of the liver in a child of 8. The icterus disappeared eight days after the operation and the enlarged liver decreased markedly in size. The case could not be followed any further. Eppinger has recently collected the cases in which splenectomy has been performed for hypertrophic cirrhosis of the liver, and the results show that the operation is justified. A histologic picture of the spleen in some cases is given, showing a marked increase in connective tissue. The changes are similar to those in Banti's disease, and the similar results of splenectomy also indicate a relationship. But there are many points of difference in their symptomatology and course, although it seems certain that the spleen plays a part in the pathogenesis of both.

They further describe two cases in which splenectomy was performed for acquired hemolytic icterus. The icterus and anemia disappeared soon after the operation and did not return and the reds became normally resistant. Banti performed splenectomy in hemolytic icterus and obtained recovery; since then it has been performed with success by numerous surgeons. It is most successful in the familial form, but Micheli has reported good results in acquired hemolytic icterus. The brilliant results of splenectomy have caused many to believe that the spleen plays the chief part in the pathogenesis of hemolytic icterus. But the early improvement does not always persist, so that there must be a primary change in the red cells or defective functioning of the bone marrow. Eppinger holds that a supernumerary spleen or hemolymph glands may enlarge and assume the pathologic function of the spleen. Sometimes adhesions are formed after the operation that result in serious consequences for the patient. In the second case described they finally caused death. This must be taken into consideration in deciding the indications for the operation.

89. Alimentary Fever.—Lövegren has performed a series of experiments on dogs in an attempt to settle some of the disputed points in regard to alimentary fever, foremost among which is the question of whether the fever is really caused by the food or by bacterial invasion. He injected solutions of various kinds, salt, sugar and Ringer's solution, directly into a mesenteric vein, so that they reached the portal circulation directly, during the process of digestion. He gives the reports of the individual experiments and forty-one fever curves in the text. There is also a bibliography of 25 titles.

He found that fever really is caused by certain constituents of the food, chief among them salt and sugar. The effect is greater when the solutions are introduced directly into the portal circulation than when the injections are made into the peripheral veins. There is probably a biochemico-physical effect on the liver cells, the nature of which, however, is not definitely known. The fever is less with an isotonic solution than with either the hypertonic or hypotonic, and it is higher with milk sugar than with grape sugar. The leukocyte counts in his animal experiments were similar to those found by Rosenstern in clinical cases.

Zentralblatt für Chirurgie, Leipzig

February 13, XLII, No. 7, pp. 97-112

92 Technic for Appendectomy. B. Heile.

Zentralblatt für Gynäkologie, Leipzig

February 13, XXXIX, No. 7, pp. 97-112

93 Subcutaneous Rupture of the Clitoris from a Fall, with Large Hematoma. E. Melchior.

Gazzetta degli Ospedali e delle Cliniche, Milan

February 14, XXXVI, No. 13, pp. 193-208

94 *Intravenous Injection of Iodoform in Treatment of Pneumonia. A. Cerioli.

February 18, No. 14, pp. 209-224

95 Stab Wound of Both Heart and Lung. (Ferita del cuore e del polmone.) S. Cordoni.

February 21, No. 15, pp. 225-240

96 *Echinococcus Disease of the Lungs and Pleura. O. Ortali.

94. Iodoform in Pneumonia.—Cerioli reports eight cases of secondary pneumonia and five of primary in all of which he gave intravenous injections of a suspension of 1 gm. of iodoform in 20 gm. of a concentrated solution of glucose. There was unmistakable benefit in the secondary cases but not in the primary ones; the injections in this case generally came too late. The usual dose was 1.5 c.c. of the suspension daily or on alternate days in the seven cases in which the pneumonia was secondary to typhoid, and all those patients promptly recovered. From seven to eleven injections were made in the various cases. The patients bore the injections well; there was no cyanosis or pallor, but merely slight and transient increase of the dyspnea and rise in temperature after the first injection. In some other cases the postoperative pneumonia showed great benefit from the injections; one instance is related in detail. In a number of the above cases Cerioli had considered the patients beyond hope, but the injections tided them past the danger point. The experience with the cases of primary pneumonia was not encouraging. There is no need for the injections in mild cases, and in the severe the drug has no chance for effectual action. He always gave thymol by the mouth and digitalis at need, supplementary to the injections of iodoform.

96. Echinococcus Disease of Lungs and Pleura.—In Ortali's two cases the cough and pain in breathing simulated a tuberculous process in the lung, but there was no blood in the sputum and percussion showed an area of dulness with a convex or concave upper margin, and when the patient was sitting up the dulness extended higher in front than at the back, thus excluding an ordinary pleural effusion. The parasites were all dead in the focus on account of the suppuration, and, probably for this reason, there was no eosinophilia. In his experiences otherwise he found it marked in about two-thirds of the cases. His successful operative treatment confirms the value of prompt operative measures on even the suspicion of echinococcus disease in the lungs and pleura. Under expectant treatment there is danger of suppuration, absorption of toxins from spontaneous involution, perforation and vomica, and an emergency operation then may come too late.

Riforma Medica, Naples

February 6, XXXI, No. 6, pp. 141-168

97 *Non-Tuberculous Lesions of the Apex of the Lungs. L. Ferrannini. Commenced in No. 5.
98 *Primary Sarcoma of the Stomach; Two Cases. G. di Giacomo.
99 Epileptic Myoclonus and Paramyoclonus. E. Grande. Commenced in No. 5.

February 13, No. 7, pp. 169-196

100 Experimental Research on Influence of Manganese Nucleate on Nitrogen Metabolism. A. Jappelli.

February 20, No. 8, pp. 197-224

101 Achondroplasia Due to Excessive and Genito-Dystrophic Xeroderma to Deficient Functioning of Sexual Glands. (Valori antropometrici e documentazioni radiologiche in due sindromi antagoniste: Acondroplasia e geroderma genito-distrofico di Rummo e A. Ferrannini.) M. Bertolotti.
102 *Tardy Visceral Lesions from Inherited Syphilis. V. Bellizzi. Commenced in No. 7.

97. Non-Tuberculous Lesions of the Apex.—Ferrannini refers to apical lesions caused by inhalation of soot or other injury, and remarks that although they are not so common as tuberculous lesions yet they are of frequent occurrence and invite tuberculosis. The negative findings in regard to tubercle bacilli and the tuberculin tests are instructive only when they all harmonize over long periods and agree with the clinical findings. The main point is to bear in mind the possibility that signs of an apical affection do not mean inevitably that it is of tuberculous nature. The curability of the non-tuberculous affection on removal of the cause and the relief from dread of tuberculosis render differentiation

extremely important, especially as otherwise the patient is apt to be sent to a tuberculosis sanatorium where he might possibly acquire actual tuberculosis by close contact with the tuberculous. His apical lesion affords a special predisposition. Ferrannini found these non-tuberculous lesions in nearly 50 per cent. of the cadavers he has examined; in some the lesion was evidently of syphilitic origin, in others it was merely a focus of chronic interstitial inflammation with atelectasis of the lung traceable to some old inflammation of the pleura near the apex; in the majority, however, the trouble was a torpid chronic inflammation of the apex tissues from inhalation of soot or coal dust even in persons not professionally exposed to damage of this kind.

98. **Sarcoma of the Stomach.**—Di Giacomo says that the two cases he reports bring to 202 the number on record according to Forni's compilation in 1914. One of his patients was 91; only one other case is known after 80. In his cases the tumor was in the pylorus region and there was no metastasis.

102. **Tardy Visceral Syphilis.**—Bellizzi's first patient was a girl of 17 with apparently healthy parents, two sisters and a brother—all with negative Wassermann; eight other children had died early. The girl had been previously apparently healthy although pale, and periods of constipation had alternated with diarrhea; she had never menstruated. She applied for relief from pain in the hypochondrium and left flank which had lasted for ten days, without connection with the food or respiration. The spleen and liver were found much enlarged and the Wassermann was strongly positive. The assumption of inherited syphilis as the cause of the visceral trouble was confirmed by the rapid improvement realized under mercurial treatment. The Wassermann was negative by the end of the third month.

The other patient was a woman of 38, of small stature and rachitic, with a history of syphilis in the parents, but her health had been good until the age of 38 when she developed symptoms of cardiovascular disturbance such as we are accustomed to encounter only in acquired syphilis—a combination of valvular disease with pericarditis and aortitis, with positive Wassermann. There was no history of rheumatism in the case and nothing was found at necropsy to suggest tuberculosis; the pleural effusion gave a positive Wassermann reaction.

Hospitalstidende, Copenhagen

February 10, LVIII, No. 6, pp. 129-152

103 *Case of Osteomyelitis of the Ribs. P. Zachariae.

February 17, No. 7, pp. 153-176

104 Roentgen Examination for Gall-Stones. (Paavisning af Galdesten ved Röntgenundersøgelse.) H. J. Panner.

103. **Osteomyelitis of the Ribs.**—Zachariae's patient was a man of 38 with symptoms for the last three weeks suggesting pulmonary tuberculosis. The later course was of a septicemic type with no local process to be discovered except the small circumscribed tuberculous focus in the left lung. Finally an abscess was discovered below the right clavicle, and the operation revealed an old destructive process of osteomyelitis in the second rib. It had never given the slightest sign of its existence before, although the region had been diligently and repeatedly percussed and palpated. It is possible that roentgenoscopy might have revealed the process in the rib, but as there was no history of trauma, no tumor, no tenderness, nothing seemed to call for roentgenoscopy. The man did not rally from the operation and died the same day. In the seventy-five similar cases on record, the affection in children under 3 years old was particularly severe and fatal. In a certain number of cases the onset suggested typhoid at first.

Norsk Magazin for Lægevidenskaben, Christiania

February, LXXVI, No. 2, pp. 145-175

105 *Eye Symptoms of Multiple Sclerosis of the Brain and Spinal Cord. (De vigtigste øiensymptomer ved den multiple cerebrospinalsklerose.) H. Gjessing.

106 *Hexamethylenamin as Disinfectant for the Urinary Passages. (Om urotropin som desinficiens for urinveiene.) H. F. Høst.

107 Perforated Gastric Ulcer Involving the Pancreas in a Diabetic. K. A. Heiberg.

108 Phosphaturia. A. Tanberg.

105. **The Principal Eye Symptoms in Multiple Sclerosis.**—Gjessing reviews the prevailing opinions as to the causes of multiple sclerosis, and the symptoms in general and those on the part of the eye. Some of the latter may develop early and for a long time may be the only manifestations of the disease. Uhthoff estimated that multiple sclerosis is responsible for 45 per cent. of all the cases of retrobulbar neuritis; Oppenheim, 50 per cent. and Fleischer, 65 per cent. It occurs acute and fleeting, with recurrence in the same or the other eye, with intervals of months or years, in one case six years. The ephemeral retrobulbar neuritis with multiple sclerosis develops with the ordinary syndrome; headache, pains in and back of the eyeball, increased by movements of or by pressure on it; there may also be dizziness and flashes before the eyes, and central scotoma develops. The impairment of vision brings the patient to the physician. The indistinct outlines of the central scotoma are characteristic of multiple sclerosis, as also is its fleeting nature. It very seldom progresses to actual blindness, but persisting amblyopia is not uncommon, and slight physical exertion increases it transiently. This transient increase is characteristic of multiple sclerosis, as also the fact that the central scotoma may subside completely, leaving no sign, or there may be a tendency to atrophy of the papilla. Vision may be impaired without objective findings in the eye. A tendency to nystagmus is apparent in about 50 per cent. of all cases of multiple sclerosis, and there may be fleeting oculomotor paralysis. When the ocular muscles show a tendency to transient paralysis, along with impairment of vision, multiple sclerosis should be suggested at once. Conjugated oculomotor paralysis occurs in about 3 per cent. of all cases of multiple sclerosis. The Wassermann test is never positive with multiple sclerosis unless complicated with syphilis. Five typical cases demonstrating various types of onset are described in detail. The patients were men or women between 21 and 47, previously healthy.

106. **Hexamethylenamin as Disinfectant for the Urinary Apparatus.**—Høst's research was undertaken to determine the behavior of this drug in urines with different reactions. Formaldehyd is found in urine in amounts proportional to the concentration of hydrogen ions and the time allowed, but the acidity of the urine seems to be the principal factor in the prompt liberation of formaldehyd. His research indicates further that hexamethylenamin is partially separated in the stomach into formaldehyd and ammonia, but that these products become synthesized again in the intestines. His practical conclusions are that this drug is of little assistance with infectious processes in the kidney or ureter as the urine is passed along so rapidly through them that it has no chance for a therapeutic action on them. If the urine is extremely acid, however, it might be given a trial. Its action in the bladder depends on the reaction of the urine and on the length of the intervals between micturition. With a very acid urine, formaldehyd will be split off quickly in sufficient amounts to act on the bacteria. But if the urine is neutral or alkaline, its efficacy will depend on whether it is left in the bladder long enough for sufficient formaldehyd to be split off to have any influence. When the urine is alkaline and is voided frequently, not the slightest benefit can be anticipated from this medication for this purpose. If the urine is retained for six or seven hours at a time, then a therapeutic effect may be anticipated even with a slightly alkaline urine. If the urine is very alkaline no therapeutic benefit need be expected. As normal urine is acid or neutral, this drug has a wide field of usefulness as a prophylactic measure before operations, catheterization, etc. With retention of urine, on the other hand, it should be given very cautiously as so much formaldehyd may be liberated when the urine is long retained, that it may cause severe tenesmus. He states in conclusion that his research has demonstrated that F. Hinman was wrong when he said (THE JOURNAL, Nov. 1, 1913, p. 1601) that neutral or feebly alkaline urines are unable to split off formaldehyd. He adds that Hinman's mistake was that he did not heed the temperature in testing for formaldehyd, as this is a reversible reaction and should be carried out at 37 C. (98.6 F.).